

## Operating Instructions

Video Cassette Recorder

# NV-HS950AM

**G-CODE**

**S VHS**  
625

VHS  
PAL

**SUPER DRIVE**  
MULTI-INTELLIGENT CONTROL

Before attempting to connect, operate or adjust this product, please read these instructions completely.

# Dear Customer

May we take this opportunity to thank you for purchasing this Panasonic Video Cassette Recorder.

We would particularly advise that you carefully study the Operating Instructions before attempting to operate the unit and that you note the listed precautions.

## G-Code Programming System

Programming is now easier than ever: simply enter the G-Code number provided in the programme schedule column carried by newspapers and magazines.

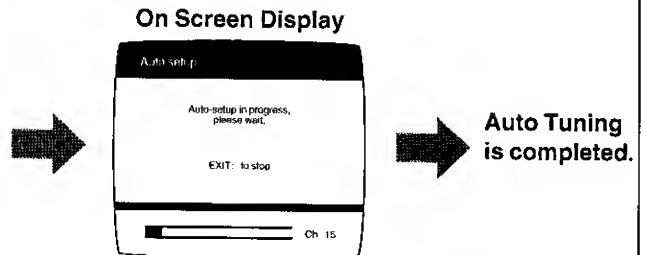
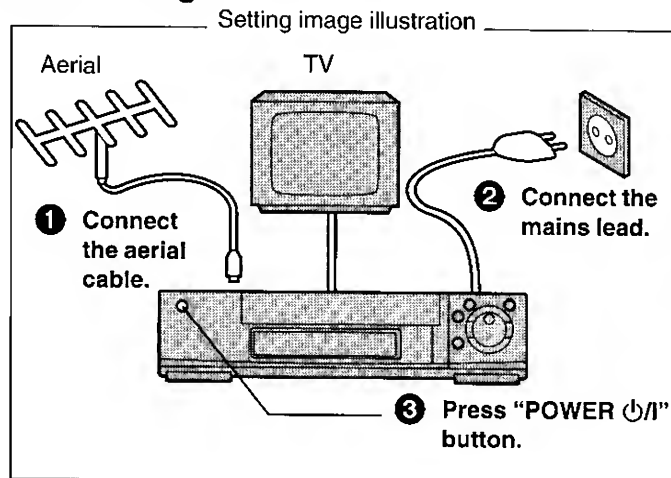
- G-CODE is a trademark of Gemstar Development Corporation. The G-CODE system is manufactured under license from Gemstar Development Corporation.

## Crystal View Control

CVC circuit for automatic tape calibration and optimizing of playback characteristics.

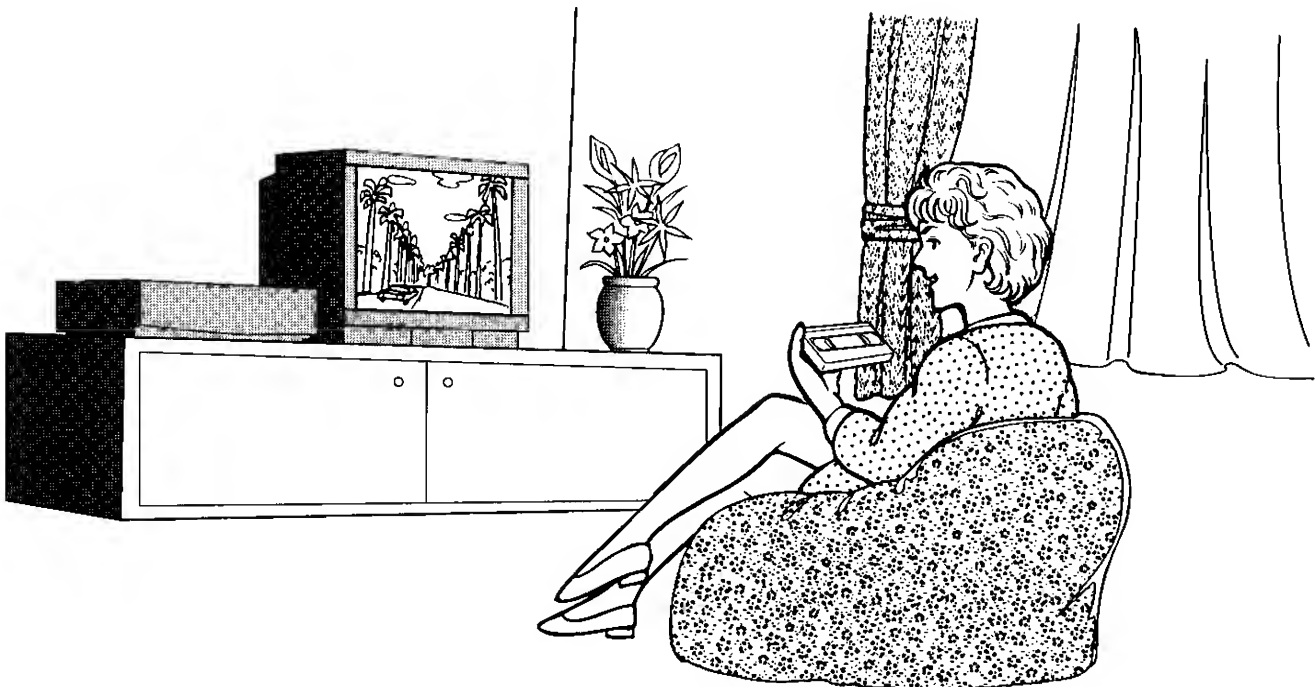
During playback the contrast of tapes recorded with good level is automatically optimized.

### Auto Tuning



All broadcasting stations that can be received in the area are automatically tuned and stored in memory.

- Don't turn off the VCR halfway.



# Contents

## IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

## WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

## Remarks

1. This VCR is capable of receiving SECAM type broadcasting programmes (SECAM B/G) and recording/playing back its colour television signals.
2. When a cassette which has been recorded on this VCR is played back on a SECAM VCR, the picture may be reproduced in black and white. When it is played back on a PAL VCR without SECAM capability, the picture may be not reproduced in normal colour.
3. When cassettes recorded on a SECAM VCR or SECAM pre-recorded cassettes are played back on this VCR, the picture is reproduced in black and white.
4. This VCR is not designed for use in France, where a SECAM VCR should be used instead.

As this equipment gets hot during use, operate it in well ventilated place; do not install this equipment in a confined space such as a book case or similar unit.

## FOR YOUR SAFETY

### ■ DO NOT REMOVE OUTER COVER.

To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

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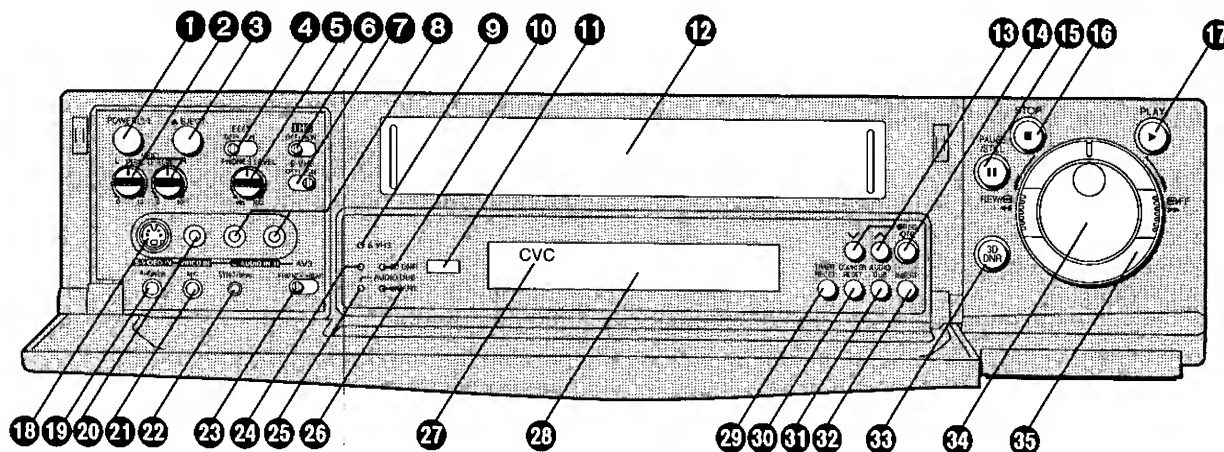
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# Controls and Connection Sockets

This gives a detailed explanation of the function of each button, switch and connection socket.



## 1 POWER $\odot/\odot$ (VCR $\odot$ )

Press to switch the VCR from on to standby mode or vice versa. In standby mode, the VCR is still connected to the mains.

## 2 AUDIO REC LEVEL

To adjust the recording level to peak at +4 dB on the recording level indicator.

## 3 EJECT

To eject a video cassette.

## 4 EDIT

OFF: For normal use of the VCR.

ON: Select this position when editing.

The picture quality is set to a status which is suited to editing.

- The 3D DNR function ceases to work.
- The TBC does not function during slow playback or still-picture playback.
- This must be set to ON when performing editing operations using the VITC code.

## 5 PHONES LEVEL

For adjusting the volume level of connected stereo headphones.

## 6 TBC

When the tape in the cassette is loose or damaged, or when the tape movement is unstable during recording or playback, the playback picture may shake from side to side and the picture may become distorted. In this case, activate the Time Base Corrector by setting the TBC Switch to ON, and the picture will become stable and the shaking will be minimized.

- For normal use, set the TBC Switch to OFF.
- During playback, the picture may shake vertically or horizontally. In such a case, set the TBC Switch to OFF.
- This function will not work during NTSC playback.

## 7 S-VHS

When recording on an S-VHS cassette tape, select the desired recording format with this switch.

ON: The recording will be made in the S-VHS format.

- The S-VHS indicator lights up.

OFF: The recording will be made in the VHS format.

- The S-VHS indicator does not light up.

(It is possible to make a recording on an S-VHS cassette tape in the VHS format, for example, in order to play back the tape on another VHS VCR.)

- When using VHS cassettes, the recording is made in the VHS format irrespective of the position to which this switch is set.

- When a tape which was recorded in the S-VHS format is played back on a conventional VHS VCR, it is not possible to obtain playback picture.

## 8 AUDIO IN (AV3)

To connect the audio cable to a movie camera or to another VCR.

## 9 S-VHS Indicator

Lights up when the S-VHS format.



## 10 3D DNR Indicator

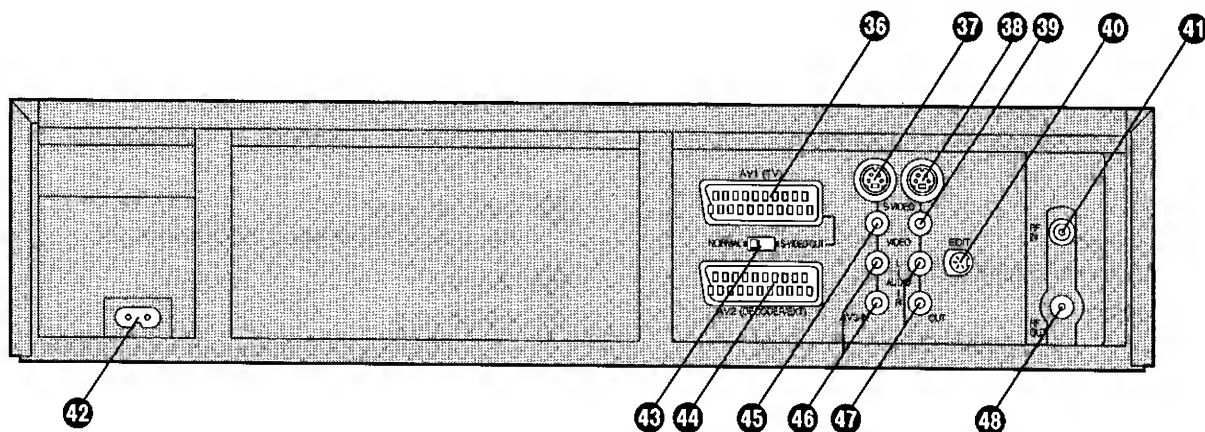
When the 3D DNR function is on, this indicator is lit.

## 11 Infra-red Remote Control Receiver Window

## 12 Cassette Compartment

Insert a video cassette here.

- 13**    
To select the required programme position (TV station).  
These buttons can also be used for tracking adjustment and vertical locking adjustment. See page 9.
- 14** **REC/OTR**  
To start a recording.  
For One-Touch Recording (OTR).
- 15** **II (PAUSE/STILL)**  
In the stop mode: Still picture (Jog/Shuttle mode).  
During playback:  
•By pressing: Still picture. "II" is lit. (Jog/Shuttle mode).  
During recording: Interrupts recording.
- 16** **■ (STOP)**  
To stop any playback or recording.
- 17** **▶ (PLAY)**  
To start playback. "▶" is lit.  
For the repeat playback function.
- 18** **S-VIDEO IN (AV3)**  
To connect the S-Video cable to a movie camera or to another VCR that has a S-Video output socket.  
•If the S-Video cable is connected, other video input (AV3) is automatically switched off.
- 19** **PHONES**  
To connect stereo headphones.
- 20** **VIDEO IN (AV3)**  
To connect the video cable to a movie camera or to another VCR.
- 21** **MIC**  
To connect the microphone for recording. Once connected, this socket has priority.
- 22** **SYNC/8 mm**  
To connect the synchro connection cord (VW-K10E/VW-K1E) to a movie camera or another VCR equipped with synchronized editing capability.  
To connect a movie camera or another VCR equipped with LANC socket for One-Touch-Editing.
- 23** **AV3 Selector**  
When Recording via the AV3 sockets on the front panel or rear panel, set this switch to FRONT or REAR.
- 24** **Standby Indicator**  
This indicator is lit when the VCR is turned off or the VCR is timer recording standby mode.
- 25** **AUDIO DUB Indicator**  
This indicator is lit when the audio dubbing is performed.
- 26** **INSERT Indicator**  
This indicator is lit when the insert editing is performed.
- 27** **CVC Indicator**  
This indicator is lit when the power is ON.
- 28** **Display**
- 29** **TIMER REC**  
To turn the timer recording function on and off.  
 is lit or not lit.  
Once operating timer recording function, the normal VCR operation is not possible unless this button is set to off.
- 30** **COUNTER RESET**  
To reset the tape counter (elapsed time) to "0:00.00".  
•The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.
- 31** **AUDIO DUB**  
To set up the VCR for audio dubbing.
- 32** **INSERT**  
To set up the VCR for insert editing.
- 33** **3D DNR**  
ON: Using the 3D DNR function, playback is performed in the state which achieves optimum picture quality in light of characteristics of a tape.  
•The 3D DNR indicator is lit.  
•This control should normally be left in the ON position.  
•The 3D DNR function does not work during NTSC playback.  
OFF: Turn off the 3D DNR function.  
•The 3D DNR indicator is not lit.
- 34** **Jog Dial**  
To locate any desired frame with utmost precision.
- 35** **Shuttle Ring**  
In the stop mode: To rewind or fast forward the tape.  
In the playback mode:  
To search picture backward or forward.  
In the still playback mode:  
To adjust playback speed backward or forward.  
In the rewind or fast forward mode:  
To obtain high speed picture.

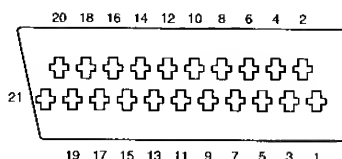


### 36 AV1 (TV)

This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.

This is also called Scart

Peritel  
Euro Connector  
Euro AV



NORMAL (AV1/AV2)	S-VIDEO (AV1)
1 AUDIO OUTPUT CH2 (R)	1 AUDIO OUTPUT CH2 (R)
2 AUDIO INPUT CH2 (R)	2 AUDIO INPUT CH2 (R)
3 AUDIO OUTPUT CH1 (L)	3 AUDIO OUTPUT CH1 (L)
4 AUDIO GND	4 AUDIO GND
5 BLUE GND	5 No connection
6 AUDIO INPUT CH1 (L)	6 AUDIO INPUT CH1 (L)
7 BLUE	7 No connection
8 SWITCHING VOLTAGE	8 SWITCHING VOLTAGE
9 GREEN GND	9 No connection
10 Control (AV1 only)	10 Control
11 GREEN	11 No connection
12 No connection	12 No connection
13 RED GND	13 C OUT GND
14 BLANKING GND	14 No connection
15 RED	15 C OUT
16 BLANKING	16 No connection
17 VIDEO OUTPUT GND	17 Y OUT GND
18 VIDEO INPUT GND	18 VIDEO INPUT GND
19 VIDEO OUTPUT	19 Y OUT
20 VIDEO INPUT	20 VIDEO INPUT
21 GND	21 GND

Caution: RGB reservation for only E/E operation when connecting the Pay TV decoder

### 37 S-VIDEO IN (AV3)

To connect the S-Video cable to a movie camera or to another VCR that has a S-Video output socket.

- If an S-Video cable is connected, other video input (AV3) is automatically switched off.

### 38 S-VIDEO OUT

To connect the S-Video cable to a TV or another VCR that has a S-Video input socket.

### 39 VIDEO OUT

To connect the video cable to a TV or another VCR.

### 40 EDIT

By connecting the optional Editing Controller (VW-EC310E/VW-EC300E) to this socket, such editing functions as Assemble Editing, Insert Editing and Audio Dubbing can be performed more quickly and efficiently between two VCRs or between a VCR and a movie camera.

To connect the supplied Edit cable to a movie camera or to another VCR for One-Touch-Editing.

### 41 RF IN

To connect to the external aerial.

### 42 AC IN~

To connect to the main power supply.

### 43 NORMAL/S-VIDEO OUT

NORMAL: Normally set to this position.

S-VIDEO OUT (AV1):

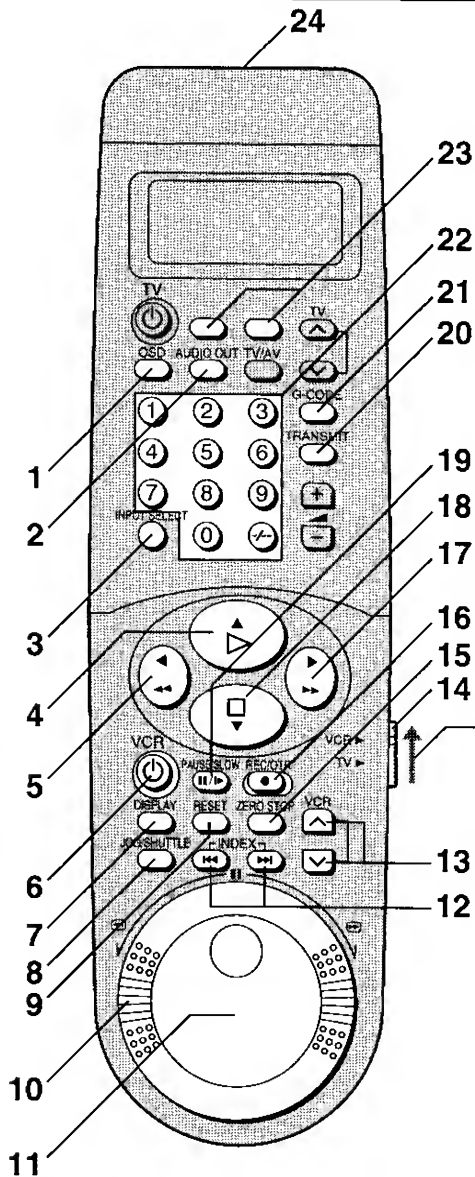
Set to this position when connecting the VCR to a TV set equipped with 21-pin Euro-AV Connector with pins for separate Y/C signal input.

### 44 AV2 (DECODER/EXT)

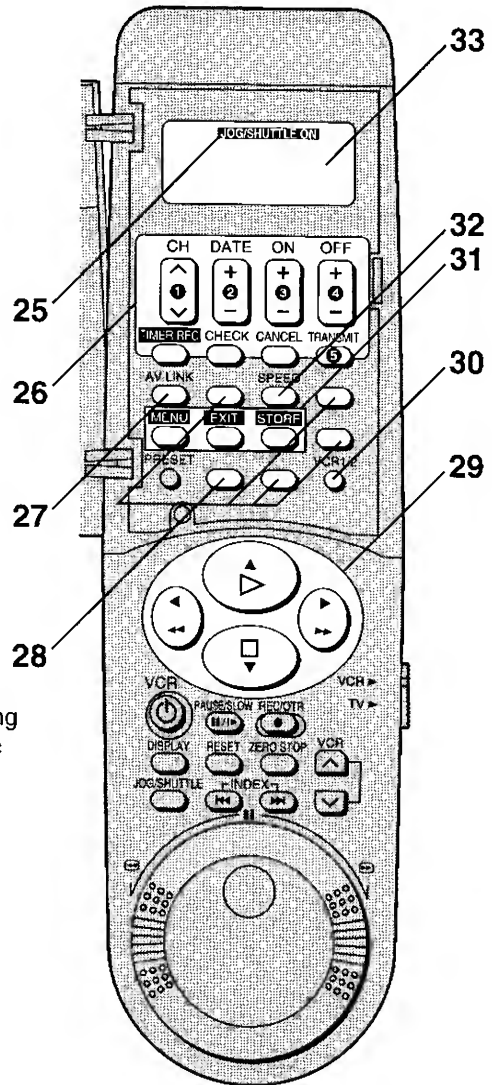
To connect to a decoder, another VCR or a satellite receiver.

- 
- 45 VIDEO IN (AV3)**  
To connect the video cable to a movie camera or to another VCR.
  - 46 AUDIO IN (AV3)**  
To connect the audio cable to a movie camera or to another VCR.
  - 47 AUDIO OUT**  
To connect the audio cable to a stereo audio system.
  - 48 RF OUT**  
To connect to the aerial terminal on a TV set.

# Infra-red Remote Controller



Set VCR/TV switch to VCR for using the numeric buttons.



## VCR OPERATION

**1 OSD**

For the On Screen Display function.

## 2 AUDIO OUT

To select the desired sound mode.

At the every push of this button, the audio output mode changes as follows.

→ Stereo → Left → Right → Normal audio track

The Left (L) and Right (R) Indicators shown which sound mode is selected in the following way.

Stereo: Both the L and R Indicators appear.

Left: The L Indicator appears.

**Right:** The R Indicator appears.

**Normal:** Both the L and R Indicators don't appear.

### 3 INPUT SELECT

To select the A1, A2 or A3 external recording source.

**4 ▷ (PLAY)**

To start playback. “▷” is lit.

For the repeat playback function.

**5 ◀◀ (REWIND)**

In the stop mode: To rewind the tape.

In the playback mode: To search backward.

In the rewind mode: To obtain high speed picture.  
“◀◀” is lit.

## 6 VCR

Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the mains.

## 7 DISPLAY

To change the indication on the VCR Display or On Screen Display.

→ Clock → Counter → Remaining Tape Time.

## 8 JOG/SHUTTLE

Press this to switch to the Jog/Shuttle mode and cause JOG/SHUTTLE ON to appear on the remote controller display. Press again to make JOG/SHUTTLE ON disappear.

In the stop mode: Still picture (Jog/Shuttle mode).

**During playback:** Still picture (Jog/Shuttle mode).

- 9 RESET**  
To reset the tape counter (elapsed time) to "0:00.00".  
•The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.
- 10 Shuttle Ring**  
Operate after pressing the JOG/SHUTTLE button to switch to the Jog/Shuttle mode.  
To adjust playback speed backward or forward.
- 11 Jog Dial**  
Operate after pressing the JOG/SHUTTLE button to switch to the Jog/Shuttle mode.  
To locate any desired frame with utmost precision.
- 12 INDEX**  
For the index search function.
- 13 V (VCR), TRACKING/V-LOCK +/-**  
To select the required programme position (TV station).  
  
For tracking adjustment and vertical locking adjustment  
•For manual tracking adjustment  
The - and + buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by automatic digital tracking control.  
Press both buttons together to return to automatic digital tracking control.  
•For slow tracking adjustment  
When noise bars appear during still or slow playback, switch over to slow playback and adjust with the - or + button to reduce the noise bars.  
•For vertical locking adjustment  
Use the - and + buttons to minimize any vertical jitter during still picture playback.  
Adjustment is not possible when the TBC is working.
- 14 VCR/TV switch**  
VCR: Selects the VCR operation mode.  
TV: Selects the TV operation mode.
- 15 ZERO STOP**  
For the zero stop function.
- 16 REC/OTR**  
To start a recording.  
For One Touch Recording.
- 17 >> (FAST FORWARD)**  
In the stop mode: To fast forward the tape.  
In the playback mode: To search forward.  
In the fast forward mode: To obtain high speed picture.  
  
">>" is lit.
- 18 □ (STOP)**  
To stop any playback or recording.
- 19 PAUSE/SLOW (II/1▶)**  
During playback:  
•By pressing: Still picture. "□□" is lit.  
•By pressing for 2 seconds or more: Slow playback. "□>" is lit.  
During recording: Interrupts recording.
- 20 TRANSMIT**  
To transmit the data that has been set on the remote controller to the VCR.
- 21 G-CODE**  
For the G-Code programming.
- 22 Numeric Buttons**  
To select VCR on the VCR/TV switch.  
•To select the programme positions (1-99) of the VCR.  
  
9: ⑨  
  
19: ⑨ → ① → ⑨  
  
•To programme a G-Code number.
- 23 No function**
- 24 Infra-red Transmitter**  
The programming data are transmitted from here to the VCR.
- 25 JOG/SHUTTLE ON display**  
While this display is lit, the unit is set to the Jog/Shuttle mode.  
•Check that the display is lit before proceeding with a jog or shuttle operation.  
•The display is automatically turned off if no operation is performed.
- 26 Timer Recording Operation Buttons**  
**CH, DATE, ON, OFF**  
To programme a timer recording.  
  
**TIMER REC:**  
To turn the timer recording function on and off.  
□ is lit or not lit.  
Once operating timer recording function, the normal VCR operation is not possible unless this button is set to off.  
  
**CHECK:**  
To check timer programmes.  
  
**CANCEL:**  
To cancel the settings made for a timer recording.  
  
**TRANSMIT:**  
To transmit the data that has been set on the remote controller to the VCR.
- 27 AV LINK**  
To select the VCR mode or TV mode for AV LINK.
- 28 No function**

**29 ▲ ▼ ◀ ▶:**

To make selections from On Screen Display.

- These buttons can also be used for playback, stop, rewind and fast forward mode.

**30 VCR 1/2**

To select the remote control mode. The selected mode appears on the remote controller display.

VCR 1: Set to this position on both the VCR and remote controller for normal use with one VCR.

VCR 2: Set to this position when using two Panasonic VCRs.

**31 On Screen Display Menu Operation Buttons**

The buttons written by green characters are used for the on screen display menu operation.

**MENU:** To make On Screen Display Main Menu appear on the TV screen.

**EXIT:** To exit the menu.

**STORE:** To confirm the selection, or to store.

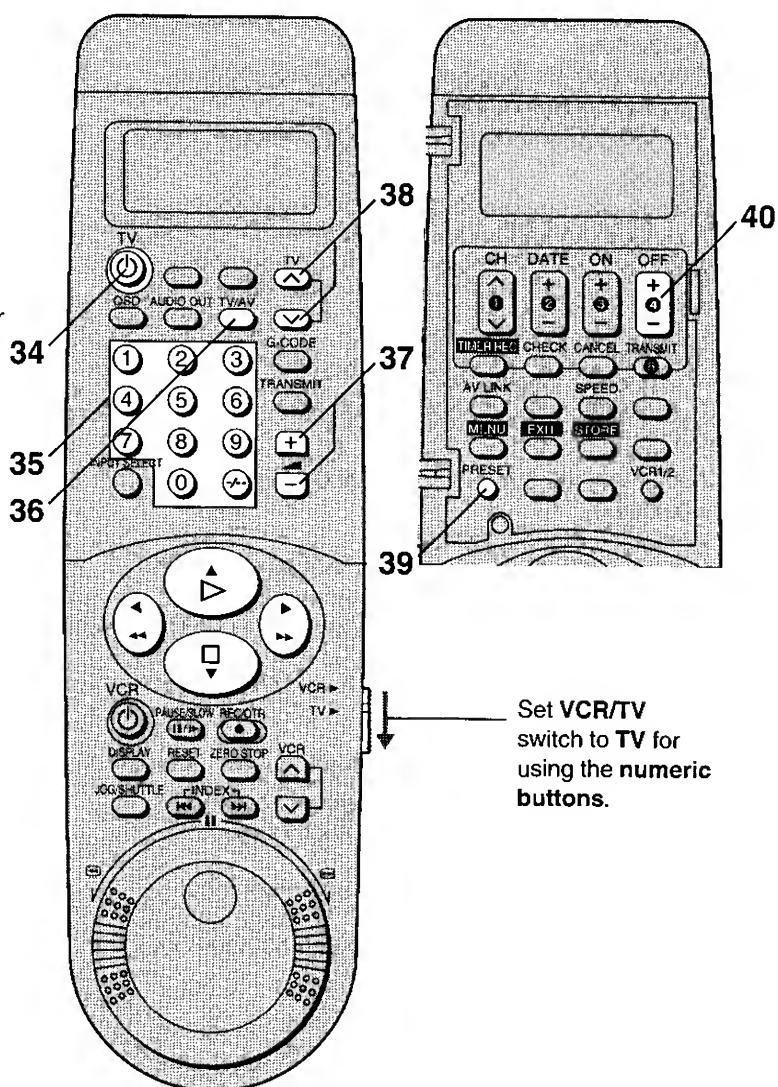
**32 SPEED**

To select the tape speed desired for recording.

SP gives the best picture quality.

LP gives the longest recording time.

**33 Display**



## TV OPERATION

Refer to page 25.

### 34 POWER (TV)

To switch the TV from on to standby mode or vice versa. In standby mode, the TV is still connected to the mains.

- With some TV models, it may only be possible to switch the TV to standby mode using this button. In this case, use **TV/AV** or **∨ ∧ (TV)** to switch the TV on.

### 35 Numeric Buttons

Selects programme positions (1–99) of the TV. Ensure that **VCR/TV** switch is set to **TV**.

### 36 TV/AV

To select the TV input.

### 37

Adjusts the volume of the TV.

### 38 **∨ ∧ (TV)**

To select the required programme position (TV station) of the TV.

### 39 PRESET

To set the remote controller for operation of the TV.

### 40 OFF

Sets the remote controller for operation of the TV.

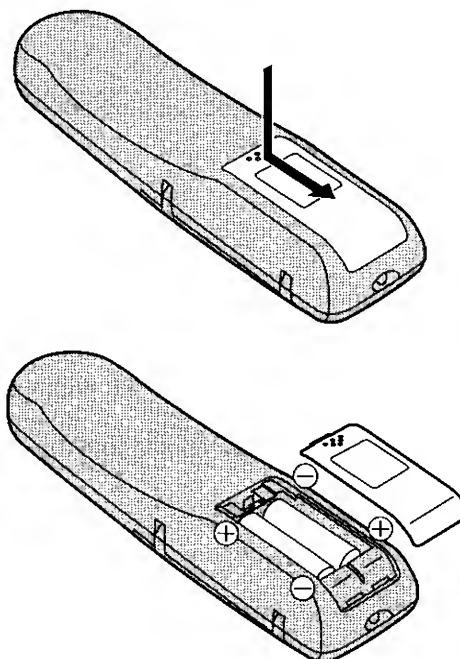
## Power Source for the Remote Controller

The remote controller is powered by 2 “AA”, “UM3” or “R6” size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

## Precautions for Battery Replacement

- Load the new batteries with their polarity ( $\oplus$  and  $\ominus$ ) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

## Installing the Batteries



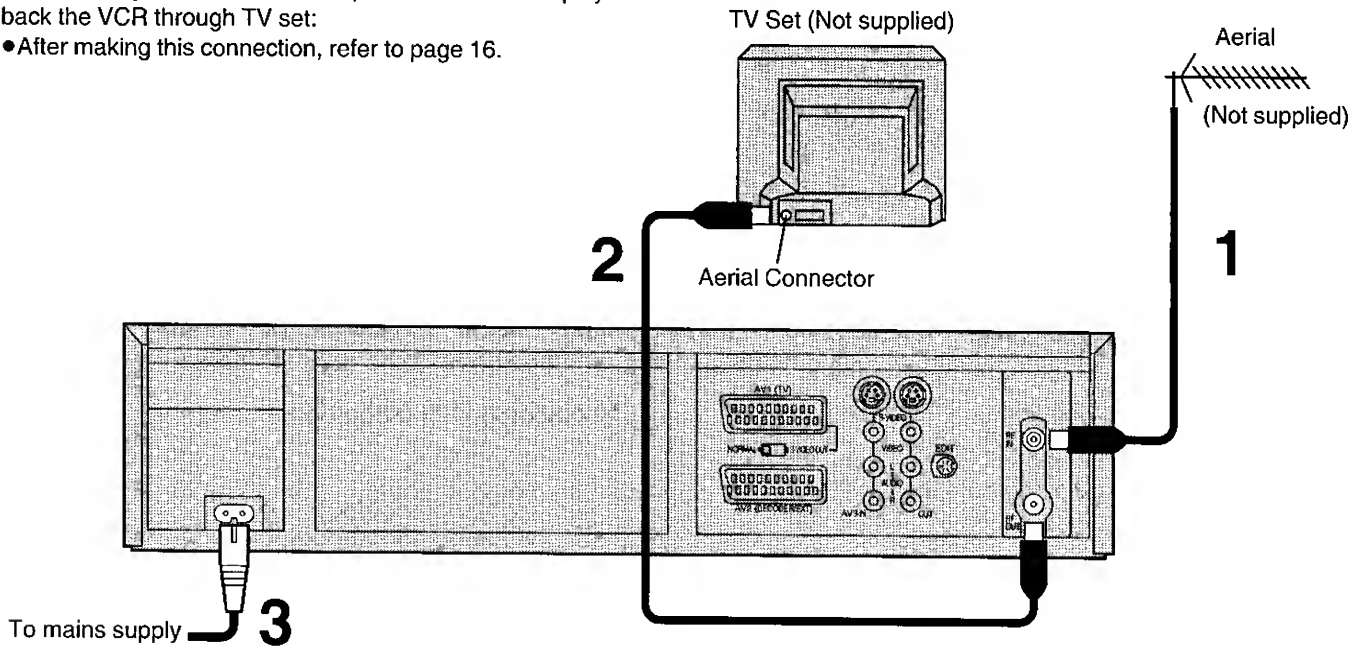
# Connections

This tells you how to connect with an aerial, TV, etc.

## Basic Connections

The following connections are required to record and play back the VCR through TV set:

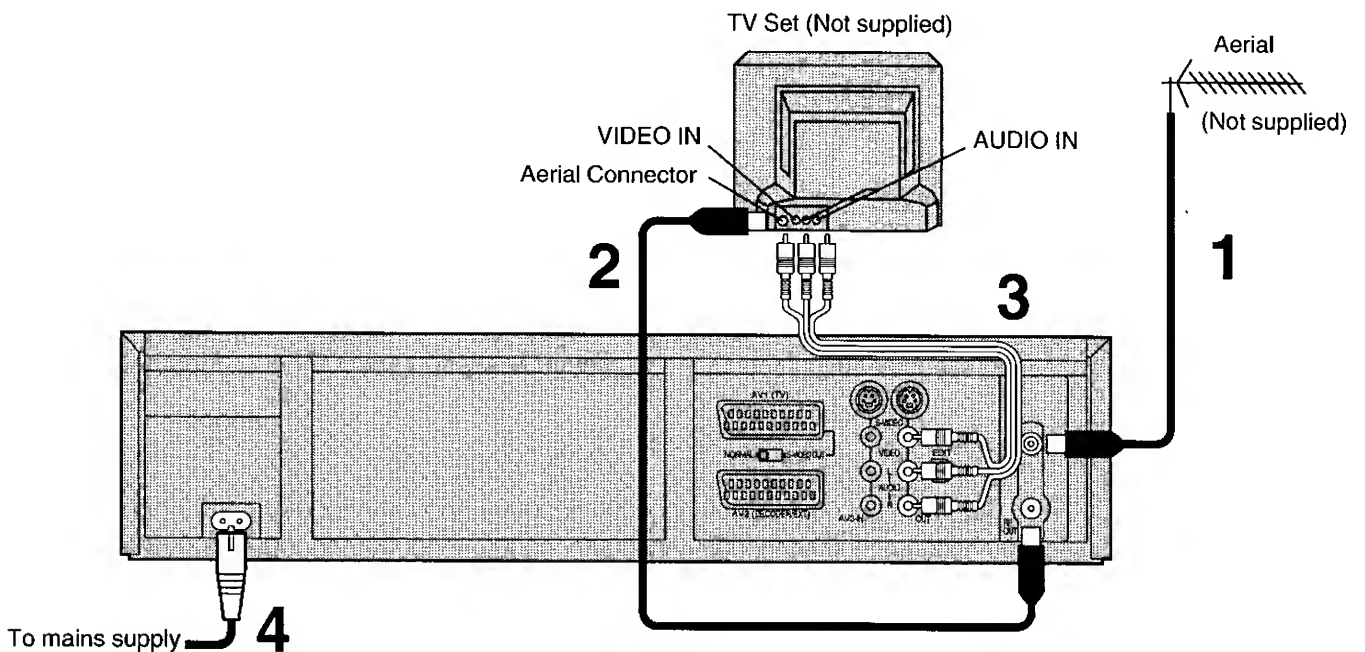
- After making this connection, refer to page 16.



## Connection to a TV using the Audio/Video Input Sockets

The following connections are required to record and play back the VCR through TV set:

- After making this connection, refer to page 16.

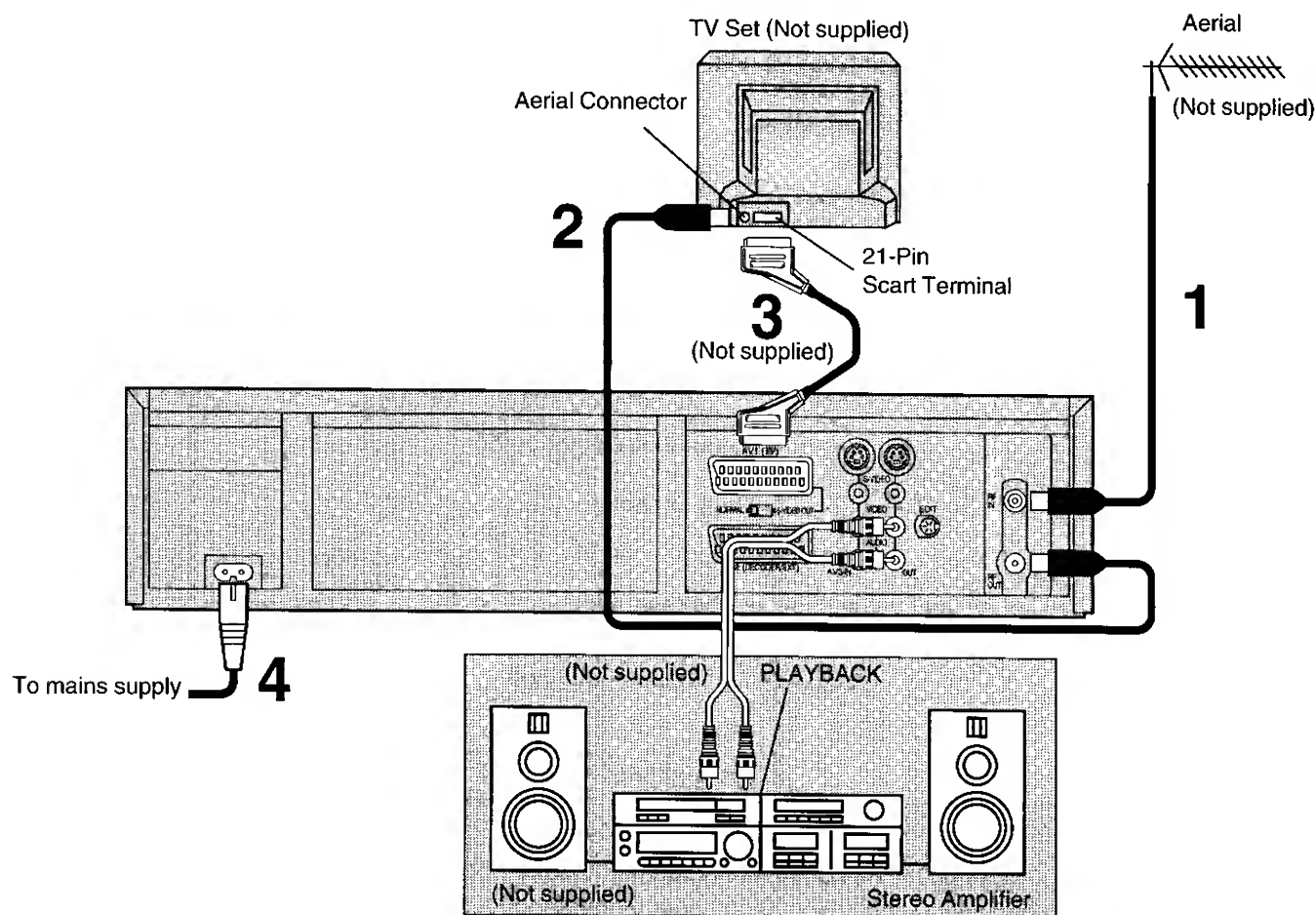


## Connection to a TV Set with 21-Pin Scart Terminal

•After making this connection, refer to page 17.

### Note:

Set the RF output channel of the VCR to “--” (RF OFF) when the VCR is connected to the TV via the 21-pin scart cable. See the bottom section on page 16.



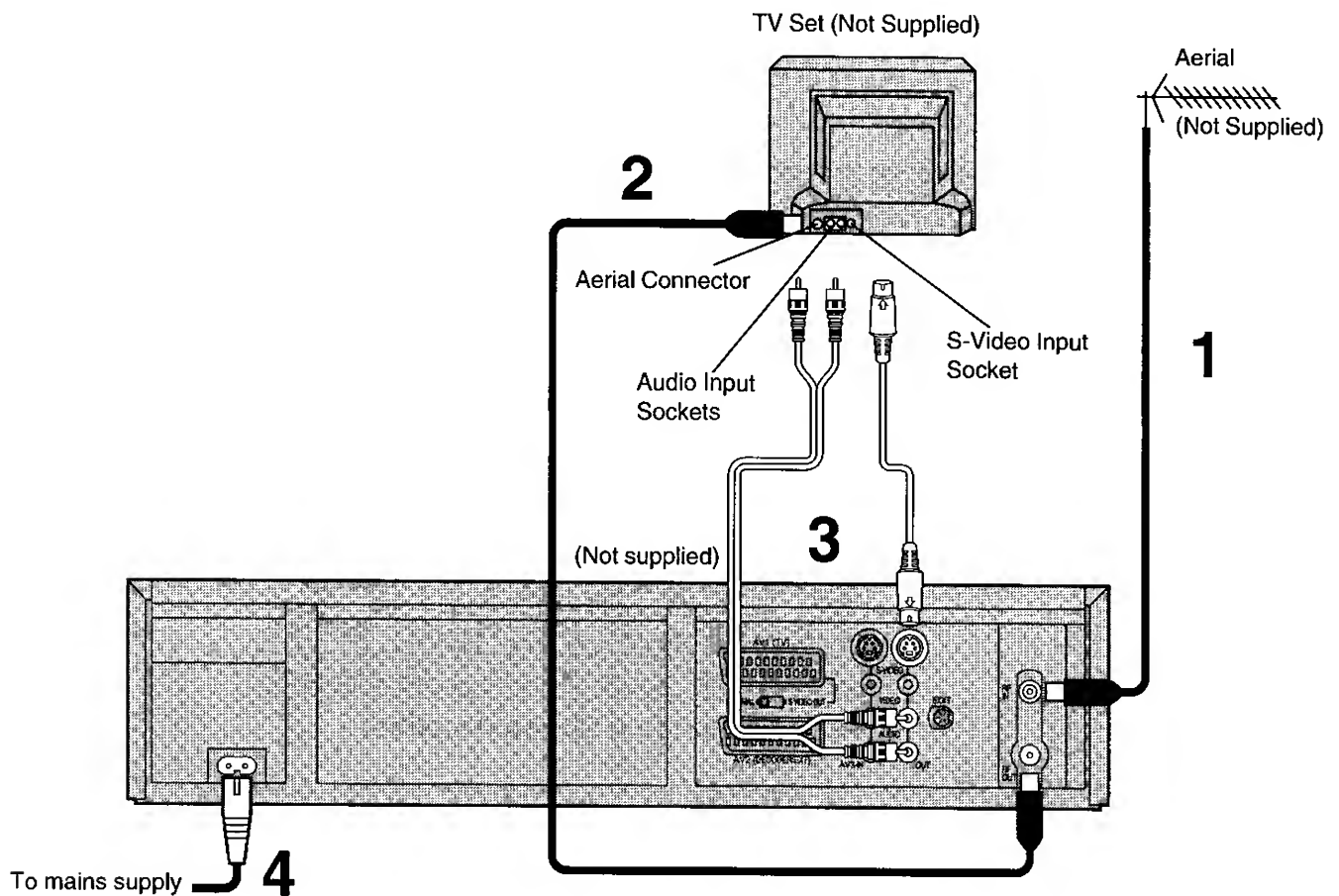
### •Connection to a Stereo Amplifier

## Connection to a TV Set with S-Video Socket

This VCR uses the S-VHS format that makes it possible to obtain high resolution and high picture quality by using the high-performance S-VHS video cassette tapes.

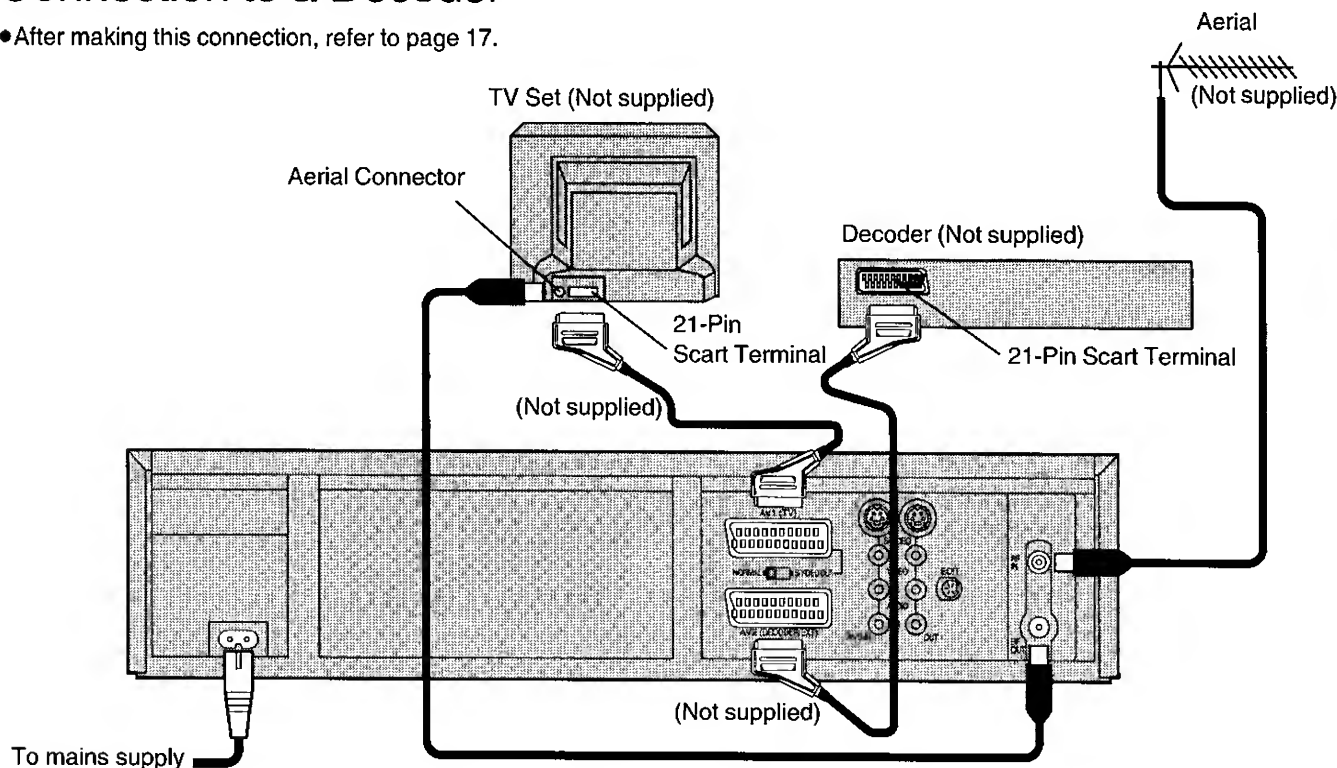
The conventional video sockets of VCRs output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the video tape. The new S (Separate)-Video Socket allows separate transmission of signals in order to obtain clearer pictures.

The connection with the S-Video Cable can also be used for playback of a tape that was recorded in the conventional VHS system. The "S" in the "S-Video Socket" stands for "SEPARATED Y/C" not for "S-VHS".



# Connection to a Decoder

•After making this connection, refer to page 17.



## Notes:

- If the TV set is provided with an RGB-compatible connector, connect the 21-pin AV cable from the VCR to this connector. Use the fully-wired 21-pin scart cable for connecting the TV set and VCR and for connecting the VCR and decoder.
- Set the RF output channel of the VCR to “—” (RF OFF) when the VCR is connected to the TV via the 21-pin scart cable. See the bottom section on page 16.
- When the decoder is connected to the AV2 socket, **AV2 Connection** must first be set to **DECODER**. (See page 23.)

## AV LINK

With this button the connected colour TV set can be switched from TV mode to VCR mode (vice versa) when it is connected by means of 21-pin scart cable.

This makes a variety of functions possible, such as simultaneous recording and viewing when a Pay TV decoder or a satellite receiver has been connected.

### VCR mode (VCR indicator lights):

To enjoy sound and pictures from the VCR.

- When **MENU** is pressed and the OSD (On Screen Display) screen is displayed, the unit also automatically switches to VCR mode. However, if the unit is originally in TV mode, the VCR indicator is not displayed.
- The unit also automatically switches to VCR mode when playback is started. However, the unit cannot be returned to TV mode during playback.

### TV mode (VCR indicator goes off):

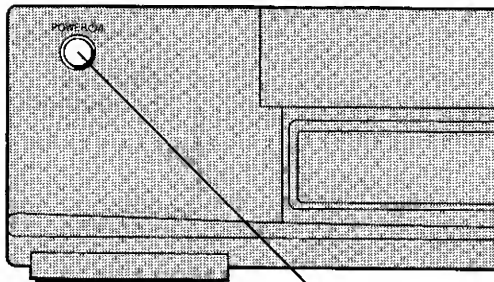
To watch another programme on the TV while recording on the VCR.

- Select the programme to be watched using the TV set's tuner.
- The sound and pictures of a different channel are received by the VCR.

	VCR	TV set
Power On	VCR mode	AV input selected
	TV mode	Input from TV set's tuner*
Power Off	—	Input from TV set's tuner

\*When the VCR is set to the TV mode and the Pay TV channel is selected, the signals will still be scrambled even when Pay TV is selected by the TV set's tuner. At a time like this, either set the VCR to the VCR mode or switch the TV set's input signals to AV input.

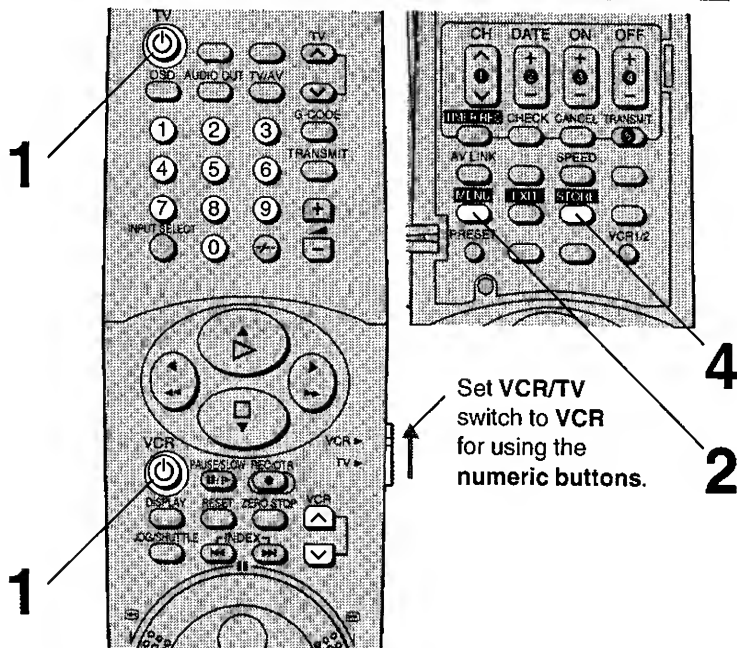
# Tuning the TV to your VCR



1

The VCR supplies a signal to the TV set via the RF coaxial cable on channel 36. It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VCR to the TV through the 21-pin scart terminal, then you do not need to follow the procedure mentioned below.



## Operations

1



Turn on the TV and VCR.

2

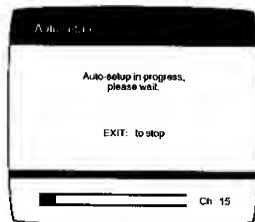


Keep **MENU** pressed for 5 seconds or more.

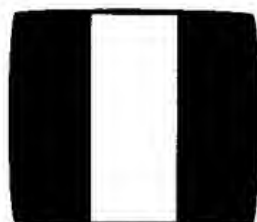
- Press the button until "Ch" appears in the VCR display.

3

### On Screen Display



(During Auto Setup)



(After Auto Setup)

Set the TV to an unused position which you wish to use for your video playback.

- Tune the TV until the test pattern appears on the screen.
- During Auto Tuning, the test pattern screen does not appear, and the Auto Tuning screen appears instead.

4



Press **STORE** to exit the Test Pattern screen.

### Use the remote controller for changing the RF output channel setting:

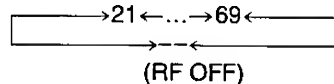
If you are encountering interference from a TV broadcast on this video channel, you may readjust to another free channel (21-69).

Follow the steps 1 and 2 above.

3 Enter the desired channel number (21-69) by using the **numeric buttons** or the  $\nabla$   $\blacktriangle$  of the remote controller.

- Set the RF output channel of the VCR to "--" (RF OFF) when the VCR is connected to the TV via the 21-pin scart cable.

Press the "0" numeric button or the  $\nabla$   $\blacktriangle$  buttons to display "--".



4 Press **STORE** to finish the setting mode.

- Retune your TV to the new channel for the VCR.

# Auto Setup

## Auto Tuning

When the VCR is turned on after connecting the aerial cable and the mains lead, Auto Tuning starts.



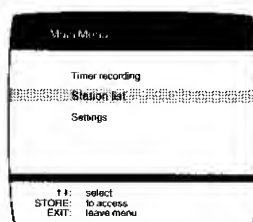
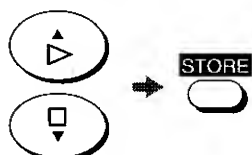
- The Auto setup is searching for TV station from VHF minimum to UHF maximum and memorizing the data for every programme position. The other programme positions are skipped.
- The Auto setup takes five or more minutes to complete the search for TV station.

## Viewing the TV station list

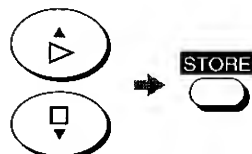
1 Press **MENU**.



2 Select **Station list**.

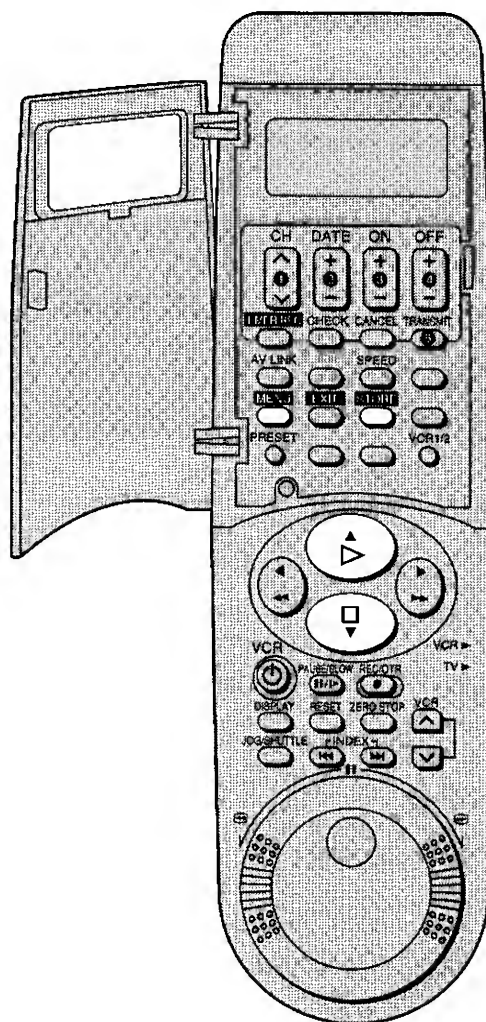


3 Select the desired TV station, if you want to view the broadcast.



Pos	Name	Ch	Pos	Name	Ch
1	***01	2	11	---	---
2	***02	4	12	---	---
3	***03	6	13	---	---
4	***04	8	14	---	---
5	***05	10	15	---	---
6	***06	12	16	---	---
7	***07	14	17	---	---
8	***08	16	18	---	---
9	***09	18	19	---	---
10	***10	20	20	---	---

14: select position  
STORE: show selected broadcaster  
MENU: return without change



# Storing TV Broadcasts into your VCR

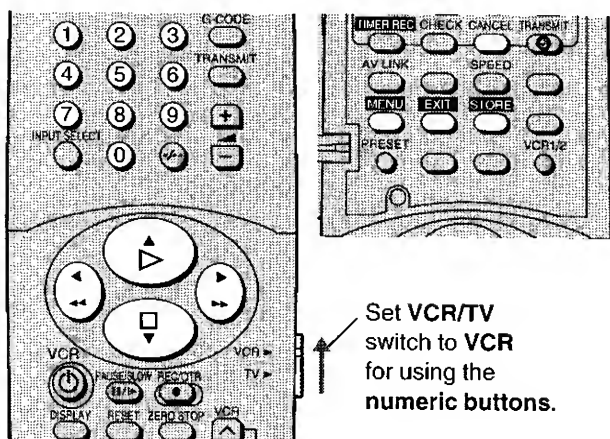
## Introduction

The VCR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.

If VCR is not correctly tuned by Auto setup, follow the procedure below.

## Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.



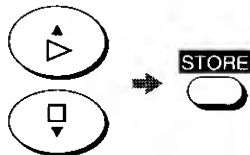
## Manual Tuning Procedure

Follow the operation guide on screen display.

## Operations

### 1 Press MENU.

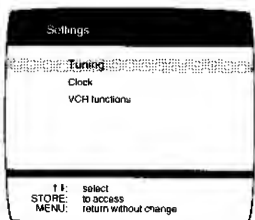
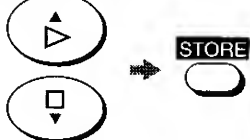
### 2 Select Settings.



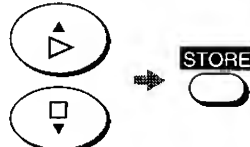
#### On Screen Display



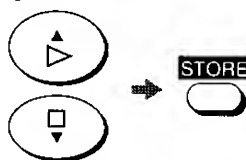
### 3 Select Tuning.



### 4 Select Manual.



### 5 Select desired Programme position.

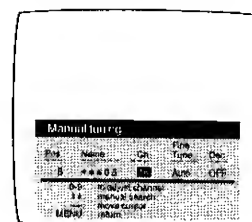


Manual tuning					
Pos.	Name	Ch	Pos.	Name	Ch
1	***01	12	11	---	---
2	***02	4	12	---	---
3	***03	6	13	---	---
4	***04	8	14	---	---
5	***05	10	15	---	---
6	***06	12	16	---	---
7	***07	14	17	---	---
8	***08	16	18	---	---
9	***09	18	19	---	---
10	***10	20	20	---	---

11: select position  
CANCEL: return  
STORE: delete  
MENU: change

### 6 Select Channel (Ch).

- Ensure that the VCR/TV switch is set to VCR.



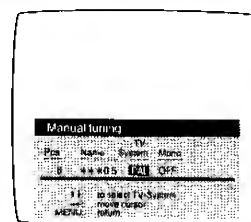
### 7 Select Dec ON or Dec OFF.

- ON: To preset pay TV stations.
- OFF: To preset normal TV stations.



### 8 Use <> to display the next screen. Select TV-System.

- PAL: For receiving PAL signal.
- MESECAM: For receiving SECAM signal.



### 9 Select Mono OFF.

- Select Mono ON to record the normal sound during a stereo, bilingual or NICAM broadcast or if the stereo sound is distorted due to inferior reception conditions.

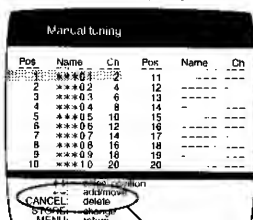
### 10 Press MENU, and then press EXIT.

#### Notes:

- When channels have been set with manual tuning, the channel position (Ch) will need to be entered in the highlighted box the first time G-Code is used.

## When changing (moving) the programme position, adding "Blank" positions and deleting stations;

These operations can be performed easily by following the indications of the On Screen Display.



Indications

Press ▲ or ▼ to select the desired programme position (station), and then follow the steps indicated below.

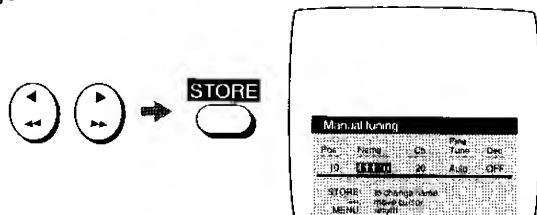
←: Press ◀ to add "Blank" position.

→: Press ▶ to change (move) the programme position.

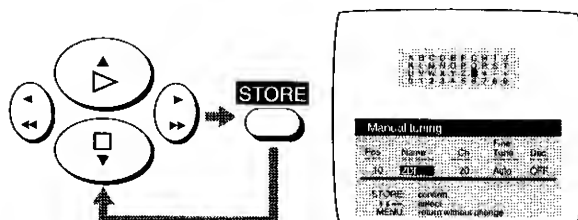
CANCEL: Press CANCEL to delete the stations.

## To change the TV station name:

After Step 5 but before Step 8, select the TV station name (Name) item using ◀ ▶, and then make the desired change.



Enter characters into all five \*□□□□ positions, from the table using the arrows and press STORE after each character. Use blank space if required, to enter a blank select the area between Z and \*.



## Channel Plan

VHF	CATV	UHF
E2-E12	S01-S05 M1-M10 U1-U10 S21-S41	21-69

Using the numeric buttons, enter in the Ch Number(s) corresponding with the channel selected to be tuned as nominated in the Channel Plan.

## Example: Australia

Channel Plan	Ch Number	Channel Plan	Ch Number	Channel Plan	Ch Number
CH-0	2	CH-32	31 or 32	CH-51	48
CH-1	3	CH-33	32	CH-52	49
CH-2	4	CH-34	33	CH-53	50
CH-3	15 or 76	CH-35	34	CH-54	51
CH-4	78	CH-36	35	CH-55	52
CH-5	80	CH-37	36	CH-56	53
CH-5A	85	CH-38	37	CH-57	53
CH-6	5	CH-39	38	CH-58	54
CH-7	6	CH-40	38 or 39	CH-59	55
CH-8	7	CH-41	39	CH-60	56
CH-9	8	CH-42	40	CH-61	57
CH-9A	9	CH-43	41	CH-62	58
CH-10	10	CH-44	42	CH-63	59
CH-11	11	CH-45	43	CH-64	59 or 60
CH-12	12	CH-46	44	CH-65	60
CH-28	28	CH-47	45	CH-66	61
CH-29	29	CH-48	45 or 46	CH-67	62
CH-30	30	CH-49	46	CH-68	63
CH-31	31	CH-50	47	CH-69	64

## Example: New Zealand

Channel Plan	Ch Number
CH-1	1
CH-2	3
CH-3	4
CH-4	5
CH-5	6
CH-6	7
CH-7	8
CH-8	9
CH-9	10
CH-10	11
CH-11	12

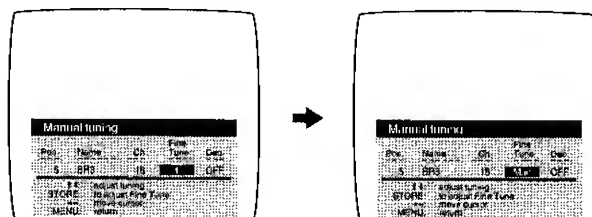
## Fine Tuning Procedure

Follow steps 1 to 5 on page 18.

6 Select Fine Tune.

7 Press ▲ or ▼ to obtain the best tuning condition.

•To return the tuning to its former state, press STORE.



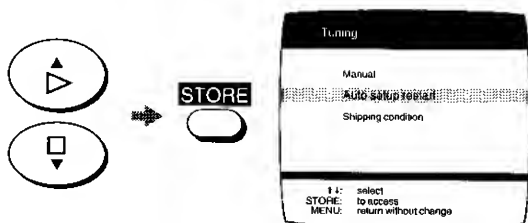
8 Press MENU, and then press EXIT.

## Auto Setup Restart

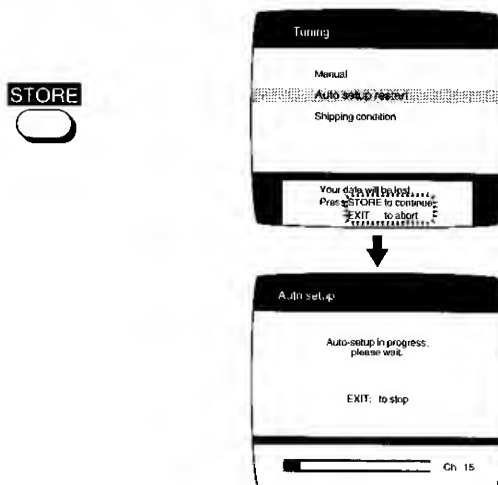
When your address changes, follow the procedure below. Follow the steps 1 to 3 on page 18.

4 Select **Auto setup restart**.

On Screen Display



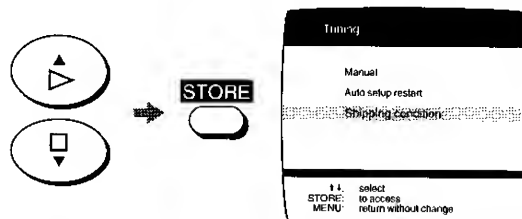
5 Press **STORE**.



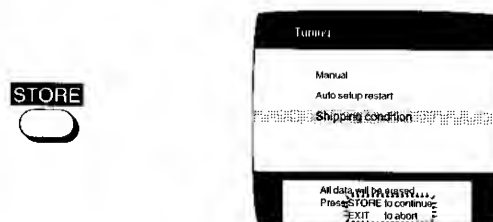
## Shipping Condition

If you want to return the VCR to the factory-preset condition, follow the procedure below. Follow the steps 1 to 3 on page 18.

4 Select **Shipping condition**.



5 Press **STORE**.



6 Press **STORE** again.



### Note:

To re-tune the VCR, disconnect and then reconnect the mains lead. If the VCR is off, turn on the VCR.

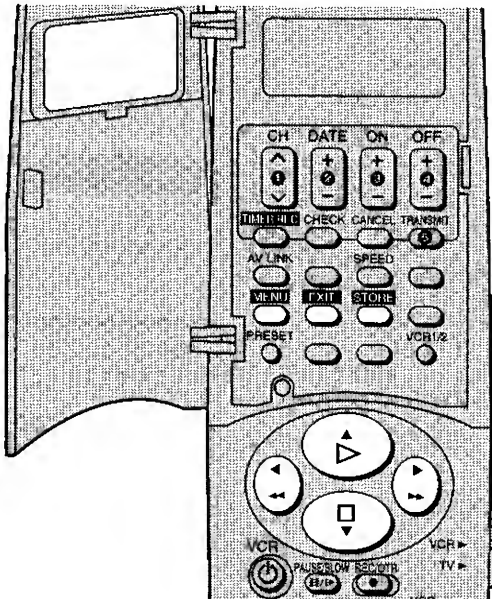
# Setting the Clock of your VCR

The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

## Preparations

- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.

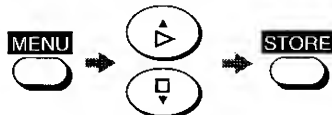


## Clock Setting

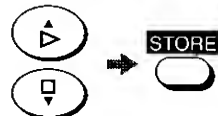
Follow the operation guide on screen display.

## Operations

- 1** Press **MENU**, and then select **Settings**.



- 2** Select **Clock**.

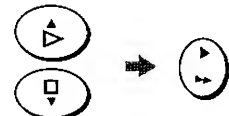


- 3** Set **Time (H/M)**.

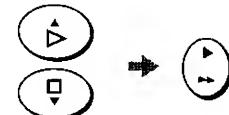
- When it is kept pressed, the indication changes in 30-minute steps.
- Press ◀ to return to the previous item.



- 4** Set **Date (D)**.



- 5** Set **Month (M)**.

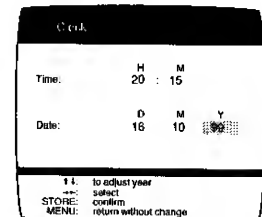


- 6** Set **Year (Y)**.

- There is no need to press ▶.



### On Screen Display



- 7** Press **STORE**.

- The clock will start.



- 8** Press **EXIT**.



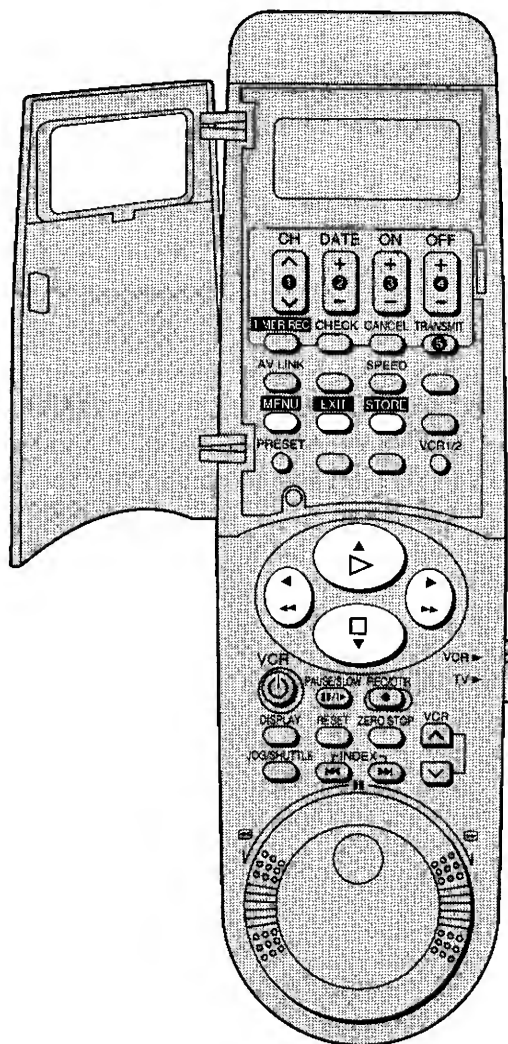
### Note:

- The clock operates for at least 60 minutes by its backup system in the event of power failure.

# Settings Using On Screen Display

## Preparations

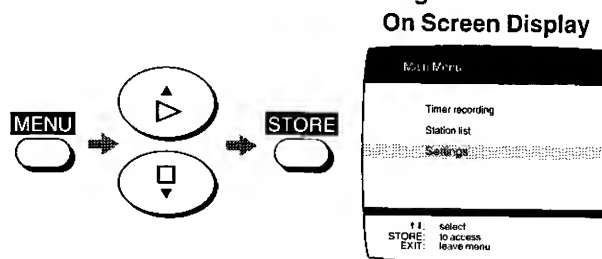
- Confirm that the TV is on and the VCR viewing channel is selected.
- Turn on the VCR.



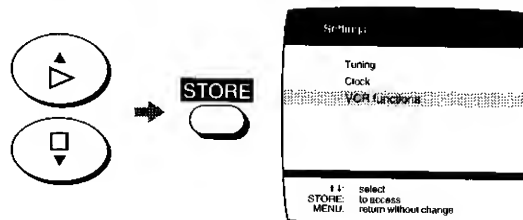
## VCR functions

### On Screen Display

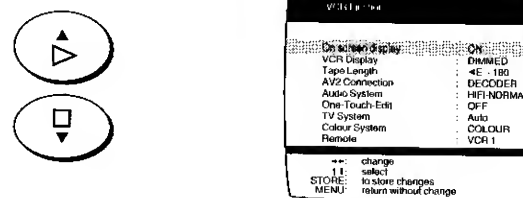
- 1 Press **MENU**, and then select **Settings**.



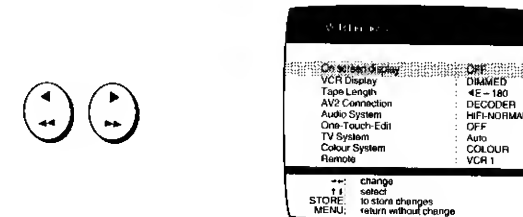
- 2 Select **VCR functions**.



- 3 Select **On screen display**.



- 4 Select **ON** or **OFF**.



**ON:** The On Screen Display will appear on the TV screen by pressing **OSD**.

**OFF:** The On Screen Display will not appear even if **OSD** is pressed.

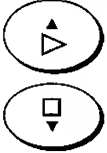
- 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



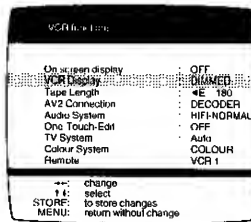
## VCR Display

Follow steps 1 and 2 on page 22.

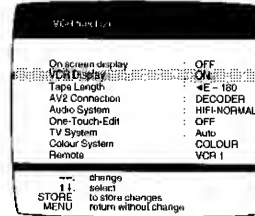
### 3 Select VCR Display.



#### On Screen Display



### 4 Select ON, OFF or DIMMED.



- ON:** When VCR is turned off, the characters are lit in the VCR display.
- OFF:** When VCR is turned off, the characters are not lit in the VCR display.
- DIMMED:** When VCR is turned off, the characters are dimmed in the VCR display.

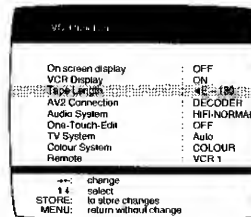
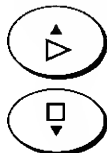
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



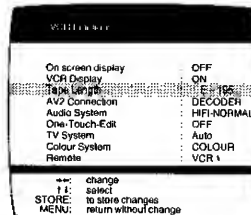
## To select the Corresponding Cassette Tape Length for Displaying the Approximate Remaining Tape Time

Follow steps 1 and 2 on page 22.

### 3 Select Tape Length.



### 4 Select the corresponding cassette tape length.



- ◀ E-180: For E30, -60, -90, -120 and -180 tapes.  
E-195: For E195 tape.  
E-240: For E240 tape.  
E-260 ▶: For E260 and -300 tapes.  
•The times displayed may differ depending on the tape used.

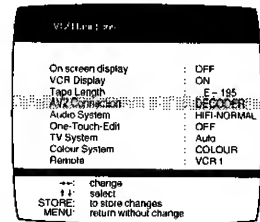
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



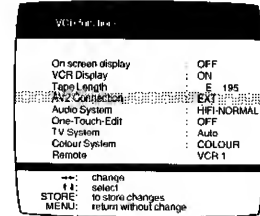
## AV2 Connection

Follow steps 1 and 2 on page 22.

### 3 Select AV2 Connection.



### 4 Select **EXT** or **DECODER**.



**EXT:** When another VCR or a satellite receiver is connected to the AV2 (DECODER/EXT) socket.

**DECODER:** When the decoder is connected to the AV2 (DECODER/EXT) socket.

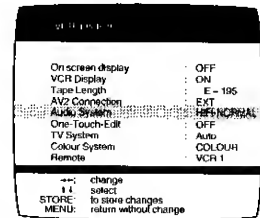
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



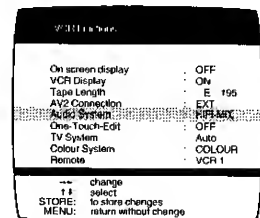
## Audio System

Follow steps 1 and 2 on page 22.

### 3 Select Audio System.



### 4 Select **HIFI-NORMAL** or **HIFI-MIX**.



**HIFI-NORMAL:** Normally set at this position to reproduce the better sound available from the Hi-Fi track.

**HIFI-MIX:** Both sound tracks (the Hi-Fi sound track and the normal sound track) are played back mixed together. Use this setting when playing back a cassette tape which has been insert edited or audio dubbed.

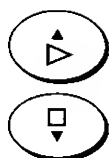
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



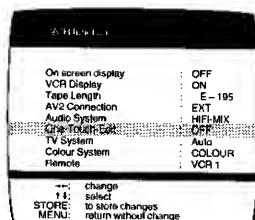
## One-Touch-Edit

Follow steps 1 and 2 on page 22.

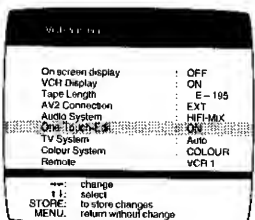
### 3 Select One-Touch-Edit.



#### On Screen Display



### 4 Select ON or OFF.



ON: For One-Touch-Editing.

OFF: For editing with editing controller or synchronized editing.

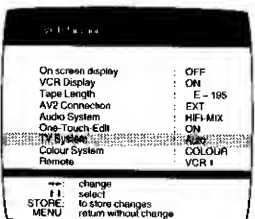
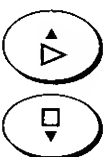
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



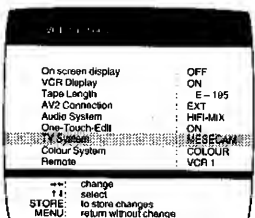
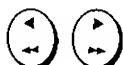
## To set the Colour TV System

Follow steps 1 and 2 on page 22.

### 3 Select TV System.



### 4 Select Auto, PAL or MESECAM.



•Set according to the colour TV system used during playback or external recording.

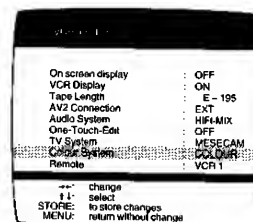
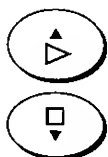
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



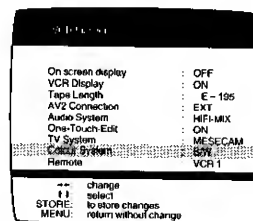
## Colour System

Follow steps 1 and 2 on page 22.

### 3 Select Colour System.



### 4 Select COLOUR or B/W.



COLOUR: Normally set at this position.

B/W: When playing back a tape which was recorded on black and white.

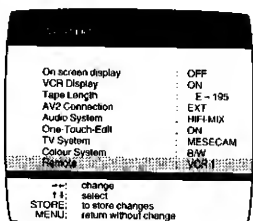
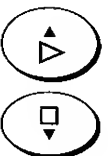
### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



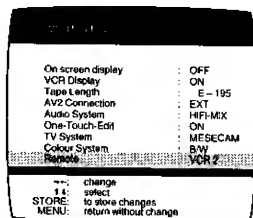
## Remote Control Mode

Follow steps 1 and 2 on page 22.

### 3 Select Remote.



### 4 Select VCR 1 or VCR 2.



VCR 1: Set to this position on both the VCR and remote controller for normal use with one VCR.

VCR 2: Set to this position when using two Panasonic VCRs.

This allows to operate VCR1 or VCR2 with remote controller.

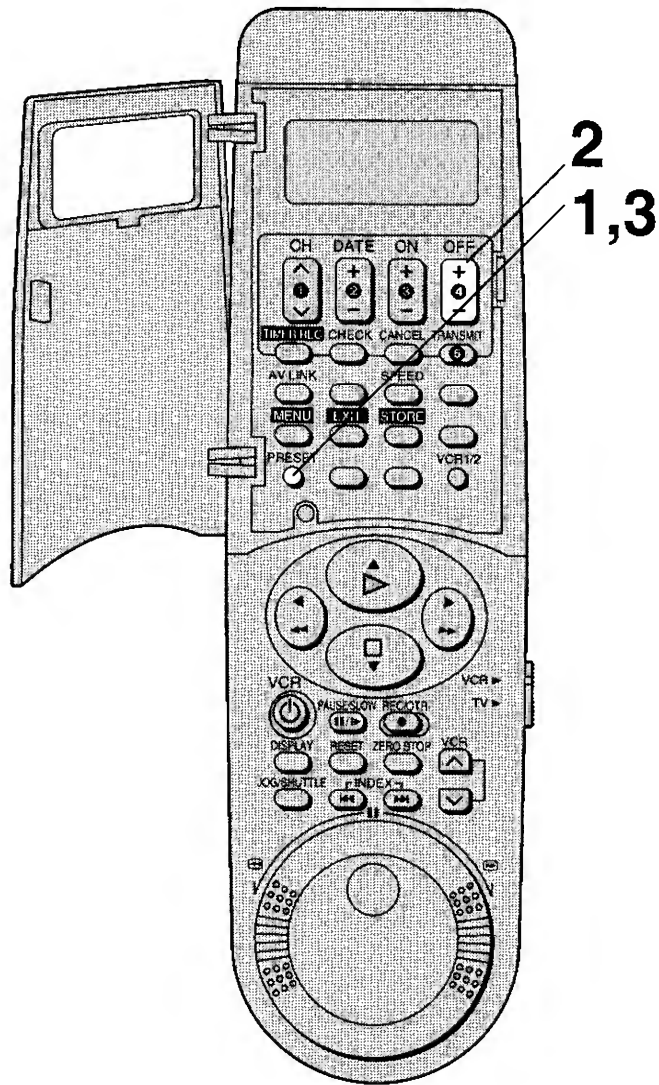
•When changing the remote control mode, please be sure to press **STORE**. And then press **VCR 1/2** to change the remote control mode of the remote controller. If this is not done, it will not be possible to operate the VCR using the remote controller.

### 5 Press **STORE**, and then press **EXIT** to make On Screen Display disappear.



# Setting the Remote Controller for Operation of your TV

You can operate some TV manufacturers (see next page) using the supplied Remote Controller after this setting up.



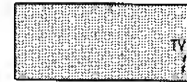
## Preparation

Turn on the TV.

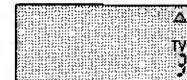
## Operations

## Display Symbols

- 1 Keep **PRESET** pressed for more than 2 seconds.

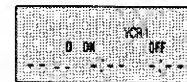


- 2 Press **OFF** several times.



- When the number matches the manufacturer of your TV, the TV's power is turned off. Read through the information on the following page as well.

- 3 Press **PRESET**.



- The remote controller display changes as shown.

## How to change the number

Each time the "+" side of **OFF** is pressed, the number is counted up by one as follows:

→ 1 → 2 → 3 ... 30 →

When the "-" side is pressed, the number is counted down by one in the reverse order to that indicated above.

## Note:

Some TV models cannot be operated using this remote controller.

Number	Manufacturer
1-4	Panasonic
5	GRUNDIG, Blaupunkt, SIEMENS
6	PHILIPS, LOEWE, SAMSUNG, RADIOLA, DUAL, PYE, BUSH, GOODMAN'S, ELEMIS, CURTIS, SBR
7	SONY
8	METZ
9	FERGUSON, THOMSON, TELEFUNKEN, GOODMAN'S, SABA
10	FERGUSON, THOMSON, TELEFUNKEN, GOODMAN'S
11	FERGUSON, THOMSON, TELEFUNKEN, GOODMAN'S, SABA
12	FERGUSON, TELEFUNKEN, GOODMAN'S, SABA
13	TELEFUNKEN
14	FERGUSON, THOMSON, TELEFUNKEN, GOODMAN'S, SABA
15	FERGUSON, THOMSON, TELEFUNKEN, GOODMAN'S, SABA, NORDMENDE, BRANDT
16	TELEFUNKEN
17, 18	HITACHI
19	SIEMENS
20	SAMSUNG
21	ITT, NOKIA, SELECO
22	NOKIA, SALORA
23	MIVAR
24	TOSHIBA
25	SANYO
26	SHARP
27	JVC
28	MITSUBISHI
29, 30	HITACHI

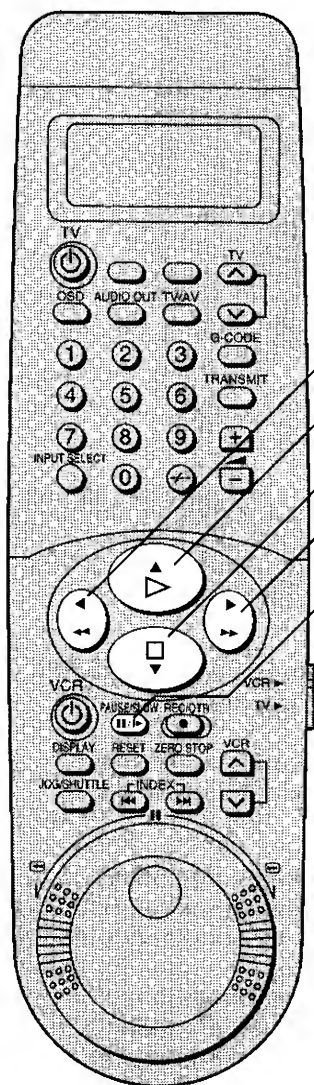
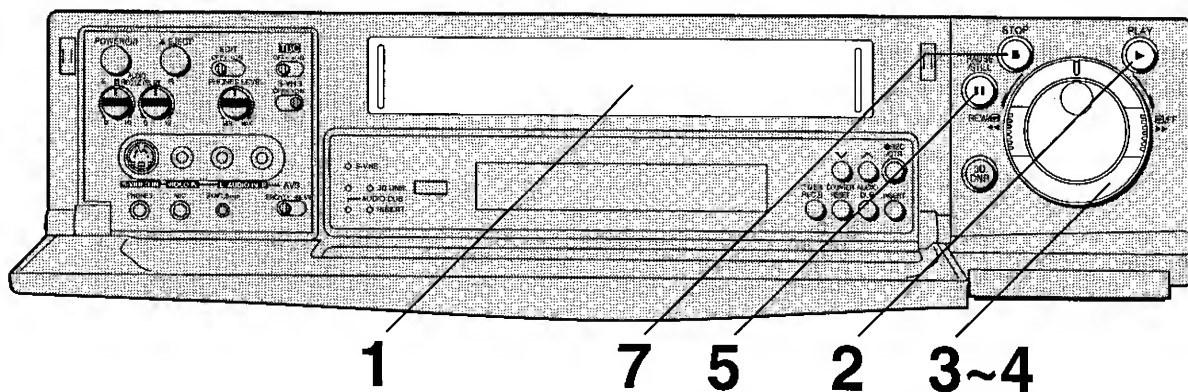
**When a TV manufacturer has the plural number**  
**For example, When the number is 1, 2, 3 or 4**  
**(Panasonic):**

When the TV's power is turned off in step 2 on previous page, turn it back on and adjust the TV's volume using this remote controller. The volume can be adjusted if the number matches the TV manufacturer. If it is not possible to adjust the TV's volume, try setting the number (1 to 4) to match the TV manufacturer again until the volume can be adjusted.

**Note:**

FERGUSON, THOMSON, TELEFUNKEN, GOODMAN'S, SIEMENS, SAMSUNG, NOKIA, SABA and HITACHI have plural numbers. Although some models may operate with any of these numbers, other models may operate with only one number. Check each number in turn, and set the optimal number.

# Playback



## Operations Display Symbols

1			Insert a recorded cassette tape.
2			Start viewing the picture.
3			Search forward by tapping <b>▶▶ (FAST FORWARD)</b> . •To change back to normal playback, press <b>▷ (PLAY)</b> .
4			Search backward by tapping <b>◀◀ (REWIND)</b> . •To change back to normal playback, press <b>▷ (PLAY)</b> .
5			View a still picture. •Press <b>PAUSE/SLOW</b> or <b>   (PAUSE/STILL)</b> . •To continue the normal playback, press <b>▷ (PLAY)</b> or <b>PAUSE/SLOW    (PAUSE/STILL)</b> .
6			View a slow motion picture. •Keep <b>PAUSE/SLOW</b> pressed for 2 seconds or more. •To continue the normal playback, press <b>▷ (PLAY)</b> .
7			Stop viewing the picture.

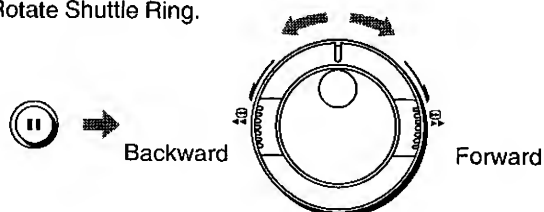
### Note:

If you keep **▶▶ (FAST FORWARD)** or **◀◀ (REWIND)** pressed in step 3 or 4, search playback is activated while the button is pressed, and operation returns to normal playback when the button is released.

## Other Playback Functions

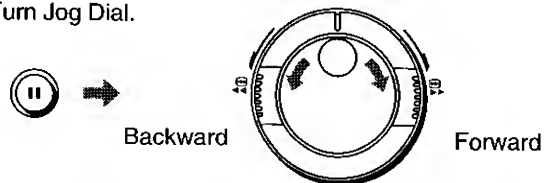
### To change the Playback Speed

- 1 Press **II** (PAUSE/STILL) on the VCR or JOG/SHUTTLE on the remote controller.
- 2 Rotate Shuttle Ring.



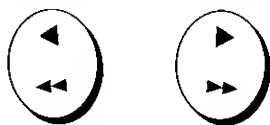
### To locate the Desired Picture Exactly

- 1 Press **II** (PAUSE/STILL) on the VCR or JOG/SHUTTLE on the remote controller.
- 2 Turn Jog Dial.



### To obtain High Speed Picture during Fast Forward or Rewind

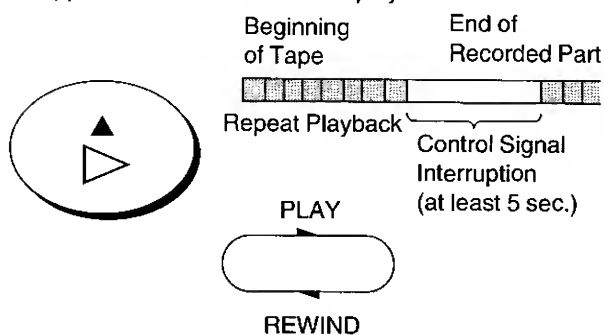
Keep **▶▶** (FAST FORWARD) pressed during fast forward.  
Keep **◀◀** (REWIND) pressed during rewind.



- The same operation can also be performed by turning the Shuttle Ring on the VCR.

### To playback the Recorded Part Repeatedly

Keep **▷** (PLAY) pressed for 5 seconds or more.  
"R" appears on the On Screen display.



- Press **□** (STOP) to release from Repeat Playback mode.

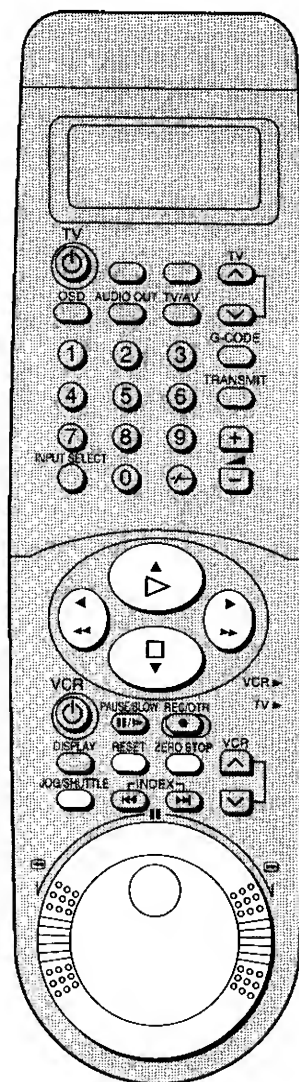
### To return to a Specified Scene

- 1 Press **RESET** to set the counter to 0:00.00.



- 2 After playback, press **ZERO STOP** in the stop mode.

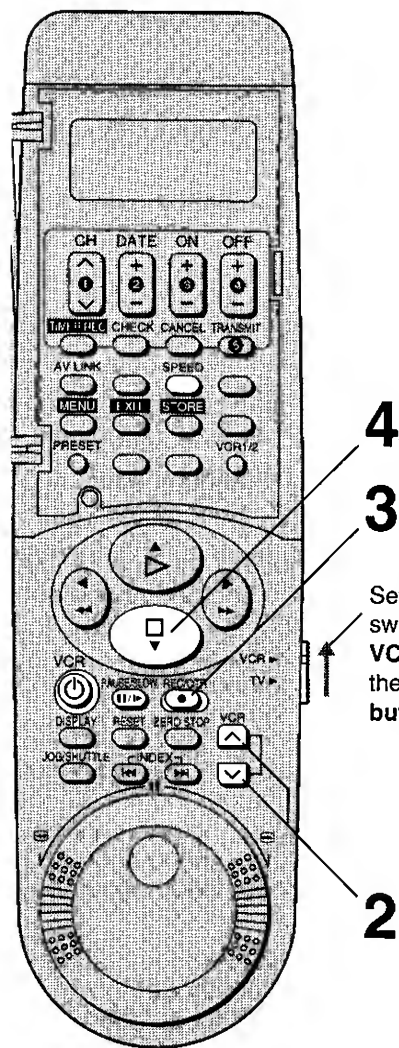
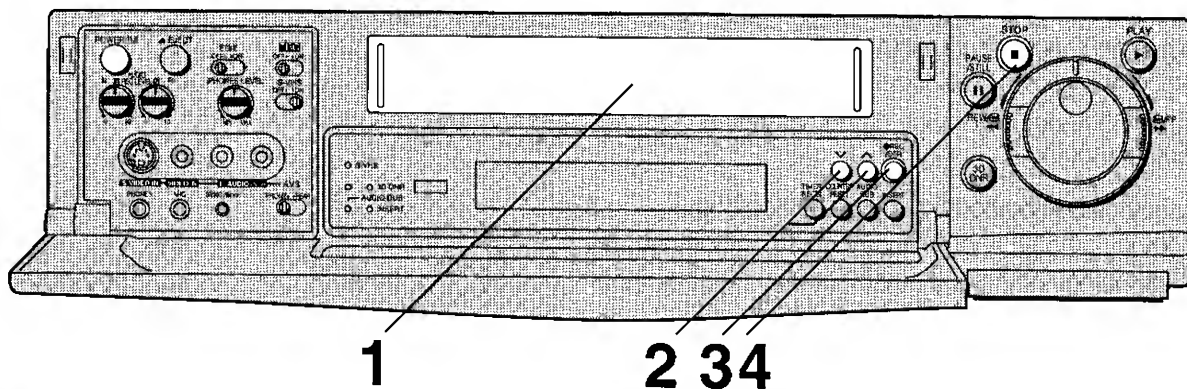
- The tape will be rewound or fast forwarded to 0:00.00 approximately.



### Notes:

- Audio reproduction of linear (conventionally recorded) tapes will be monaural when played back on the FM Hi-Fi video recorders.
- Cue, review or slow playback will be automatically released after 10 minutes, and still playback after 5 minutes.
- In LP mode only:
  1. During any playback mode other than normal playback, the picture may have some noise bars, the colour may be unstable, or a black and white picture may appear.
  2. When playing back a tape which was recorded on another VCR, it may be necessary to adjust the Tracking Control. In some cases the picture quality may still be inferior. This is due to limitation of format.

# Manual Recording



## Operations

## Display Symbols

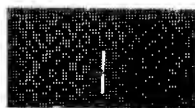
1



Insert a video cassette with an intact erasure prevention tab.

- If it has already been inserted, press **POWER** (VCR ) to turn the VCR on.

2



Select TV station.

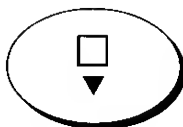
- It is also possible to select by pressing **numeric button**.
- Ensure that the **VCR/TV** switch is set to **VCR**.

3



Start recording.

4

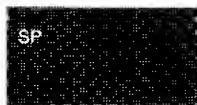


Stop recording.

Set **VCR/TV** switch to **VCR** for using the **numeric buttons**.

## To select the Desired Tape Speed

Press **SPEED** before recording.



## To interrupt Recording

Press **PAUSE/SLOW** or **II** (**PAUSE/STILL**) during recording.

Press again to continue recording.

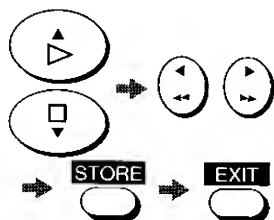


## To record One TV Programme while Viewing Another Programme

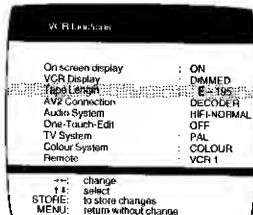
- 1 Refer to the manual recording operations steps 1 to 3.
- 2 Select the TV programme on your TV set you wish to view at the present time.

## To display the Approximate Remaining Tape Time

- 1 Select **Tape Length** from On Screen Display and select the corresponding cassette tape length. See page 23.



On Screen Display



- ◀ E-180: For E30, -60, -90, -120 and -180 tapes.
- E-195: For E195 tape.
- E-240: For E240 tape.
- E-260 ▶: For E260 and -300 tapes.

- 2 Press **DISPLAY**.



→ Clock → Counter → Remaining Tape Time →

- The remaining tape time may not be displayed correctly depending on the tape used.

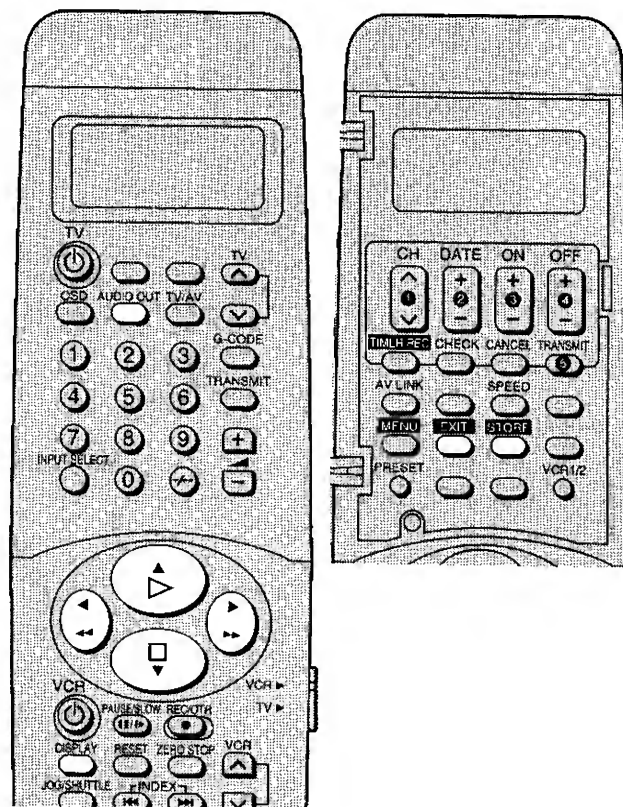
## Recording of Stereo and Bilingual Programmes

- 1 Recording is automatically made in the stereo or bilingual mode. This prevents errors in the selection of the dubbed or the original language.
- 2 During playback press **AUDIO OUT** to select the desired sound mode. See page 8.



### Notes:

- When a video cassette with a broken off tab is inserted, the "OO" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes, and be back to the stop mode.



## The NICAM Broadcast System

NV-HS950 is equipped with the NICAM sound system also.

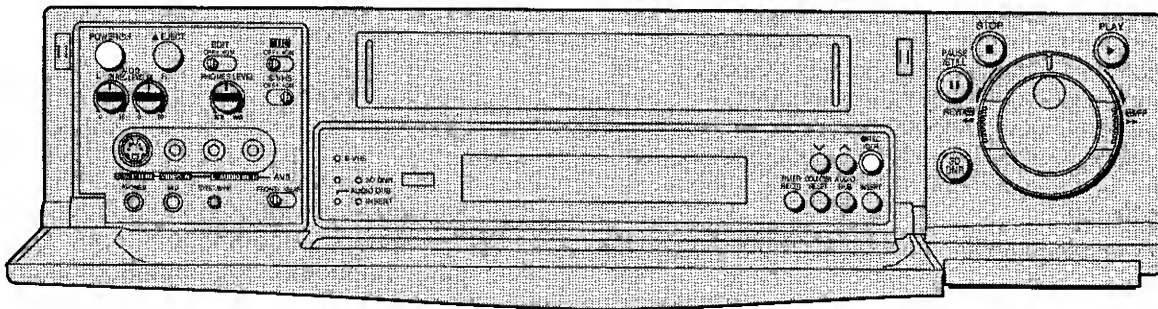
NICAM is a 2 Channel sound broadcast system to provide either a high quality stereo sound track or 2 independent MONO sound tracks, M1 and M2.

NICAM programmes are always accompanied by standard sound broadcasts and you can select the desired sound with **AUDIO OUT** (See page 8) during playback.

- The NICAM digital stereo sound can only be recorded on the Hi-Fi audio track.
- To record the regular sound (ordinary normal sound) on the FM audio tracks when a Stereo, Bilingual or NICAM programme is received, select **Mono ON** during manual tuning procedure. See page 18.

### Important Note for the NICAM System

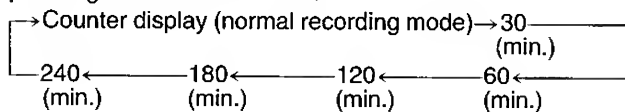
When NV-HS950 is switched on, the tuner will automatically switch to a NICAM broadcast, if NICAM is being transmitted. During test transmissions, it is possible that the sound received doesn't correspond to the picture being viewed. In order to receive a synchronized sound and picture, select monaural sound with **AUDIO OUT** (See page 8) or **Mono ON** setting. This will only apply until NICAM transmissions are fully operational. Even if the sound track is in MONO, the stereo indicator will appear.



## One-Touch Recording (OTR)

Whenever you are in a hurry to start a timer recording with automatic stop in your absence, simply set the recording duration by pressing **REC/OTR** repeatedly.

The duration indicated on the VCR display changes by pressing **REC/OTR** as follows:



### Preparation

Insert a video cassette with an intact erasure prevention tab.

### Operations

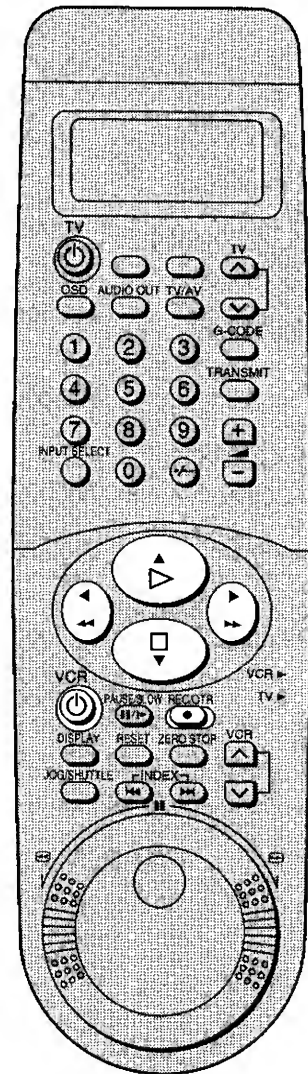
- 1 Ready the video source which is to be recorded, and start recording.
- 2 Press **REC/OTR** repeatedly to select the desired recording duration.



- The VCR will automatically switch off when OTR is completed. To turn the VCR on again, press **POWER** (VCR).

#### Notes:

- The OTR function works during normal recording.
- When the tape reaches its end during OTR, the VCR will turn itself off.
- To stop OTR at any time, press **STOP** or **POWER** (VCR).



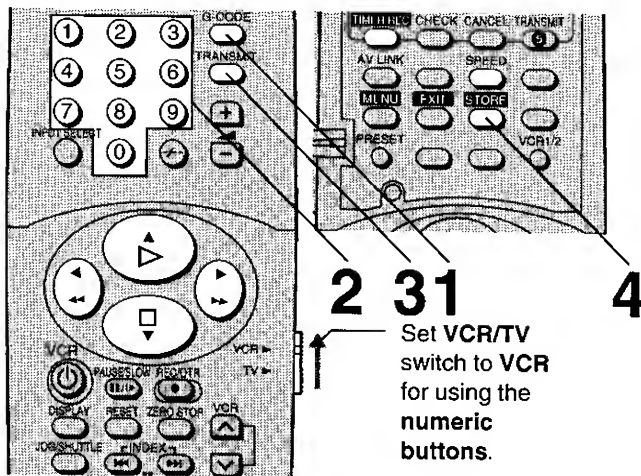
# Timer Recording

## G-Code Programming

Programming is now easier than ever: simply enter the G-Code number provided in the programme schedule column carried by newspapers and magazines. G-Code numbers are numbers which are assigned to each programme listed in the TV programme schedule carried in newspapers and TV guides. When these numbers are entered and **TRANSMIT** is pressed, the numbers are converted into the actual programming.

### Preparations

- Insert a video cassette with an intact erasure prevention tab.
- Confirm that the TV is on and the VCR viewing channel is selected.
- Ensure that the **VCR/TV** switch is set to **VCR**.



Set VCR/TV switch to VCR for using the numeric buttons.

### Operations

#### 1 Press G-CODE.

G-CODE



#### 2 Enter a G-Code number.

Example: 920216



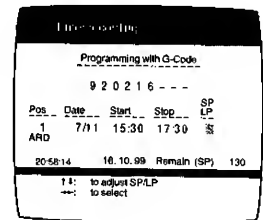
### Display Symbols

#### 3 Press TRANSMIT.

TRANSMIT



#### On Screen Display



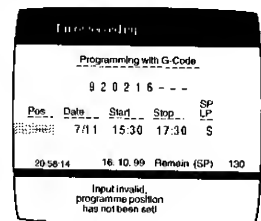
- To extend the ending time or to make any corrections, use buttons **▲ ▼ ◀ ▶**.

#### If the "--" appears in the programme position:

Select the programme position of your VCR which receives the TV station you entered at step 2 using button **▲** or **▼**.

- After several seconds have elapsed, the message display at the bottom of the OSD is replaced by the operation guide display.

- Next time G-Code for this stations is entered, the correct position will appear.



#### 4 Press STORE to confirm.

STORE



- The VCR will be in the timer recording standby mode after about 20 seconds, if **STORE** is not pressed.

#### Notes:

- To select the desired tape speed, press **SPEED** button in step 2.
- To release from the standby mode, press **TIMER REC.**
- When the G-Code number is used for programming, the recording time may be slightly longer than the actual programme time.
- When programming two or more programmes, repeat steps 1-4.
- The procedures for checking and cancelling a timer programme are the same as on page 35.



# Using On Screen Display

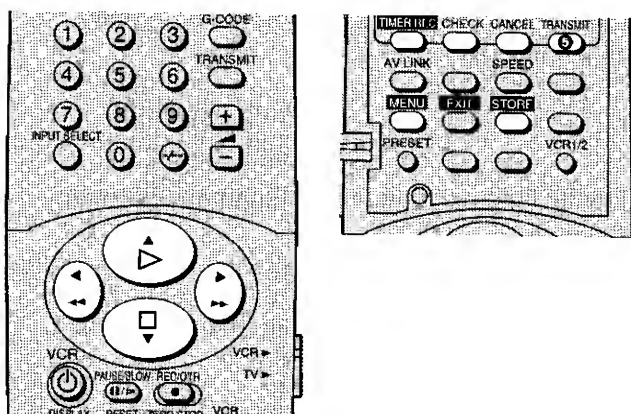
Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including weekly and daily programmes.

## Preparations

- Insert a video cassette with an intact erasure prevention tab.
- Confirm that the TV is on and the VCR viewing channel is selected.

## For Example:

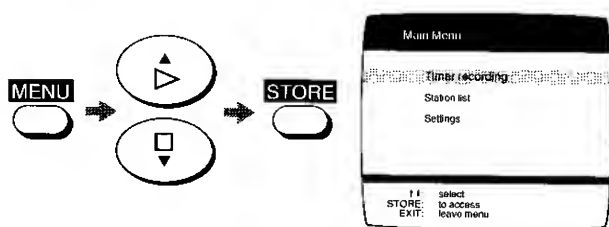
Programme position (channel); 2  
 Date; 27th, October  
 Starting time; 20:00  
 Ending time; 21:30  
 (Present date; 16th, October)



Follow the operation guide on screen display.

## Operations

- 1 Press **MENU**, and then select **Timer recording** On Screen Display

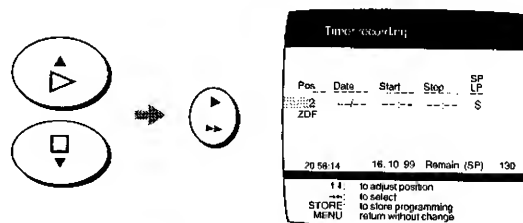


- 2 Select the unoccupied position.

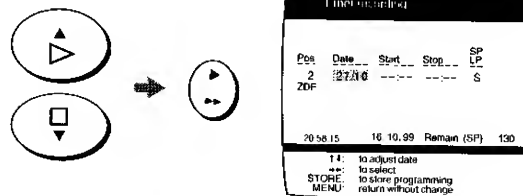


- 3 Set Programme position (channel) "2".

• Press ◀ to return to the previous item.

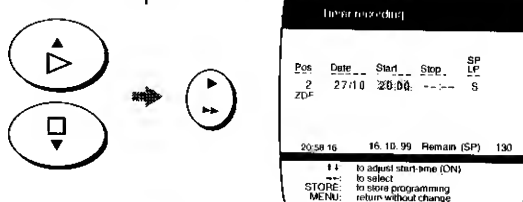


- 4 Set Date "27/10".

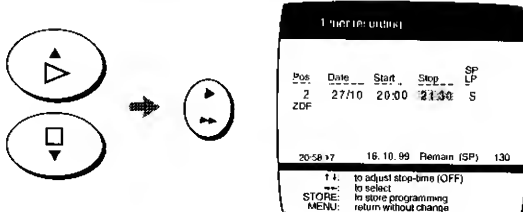


- 5 Set Starting time "20:00".

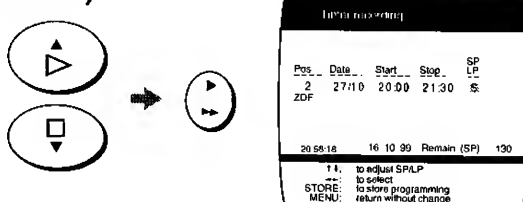
• When it is kept pressed, the indication changes in 30-minute steps.



- 6 Set Ending time "21:30".



- 7 Select the desired Tape speed (SP/LP).



- 8 Press **STORE**.

- 9 To activate timer recording, press **TIMER REC**.

## Weekly Timer Recording

In step 4, select the desired day by pressing ▼.

## Daily Timer Recording

For this timer function, several groups of days can be selected.

- (A) Daily recording from Monday to Friday  
 (B) Daily recording from Monday to Saturday  
 (C) Daily recording from Sunday to Saturday

In step 4, select the desired days by pressing ▼.

## Timer Recording from External Signal Source


If Timer Recording is performed by a unit connected to the AV1 (TV), AV2 (DECODER/EXT) socket or AV3 (Audio/Video/S-Video input sockets), select the A1, A2 or A3 indicator for the programme position.

- A1: Through the AV1 (TV) socket.  
A2: Through the AV2 (DECODER/EXT) socket.  
A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets.

## Setting other Programmes in Succession

Repeat steps 2–8.

## Checking a Timer Programme

- The VCR must be turned on, or the timer recording indicator “” is lit.
- Confirm that the TV is on and the VCR viewing channel is selected.

Press **CHECK**.

### On Screen Display

Time Accounting					
Post Name	Date	Start	Stop	SP	Min
ZDF	27/10	20.45	21.30	LP	45
ARD	30/10	19.00	18.30	SP	30
MPF	1/11	17.00	18.00	LP	60
ZDF	1/11	19.00	19.45	SP	45
---	---	---	---	---	---
---	---	---	---	---	---
---	---	---	---	---	---
---	---	---	---	---	---
---	---	---	---	---	---
21.25.38	16.10.99	Remain (SP)			1.35

11 select  
 CHECK leave menu  
 CANCEL delete

## Cancelling a Timer Programme

- The VCR must be turned on or in timer recording standby mode.
- Confirm that the TV is on and the VCR viewing channel is selected.

- 1 Press **CHECK**.
- 2 Select the desired timer programme.
- 3 Press **CANCEL**.

Print Name	Date	Start	Stop	LP	Min
ZDF	27.10	20.45	21.30	SP	45
AHD	30.10	19.00	19.30	SP	30
ZDF	31.11	19.00	19.45	SP	45
---	---	---	---	---	---
---	---	---	---	---	---
---	---	---	---	---	---
---	---	---	---	---	---
---	---	---	---	---	---
21.25.36	76.10.99	Remain	(SP)	130	

#1: select  
 CHECK: leave menu  
 CANCEL: delete

**Notes:**

- If a timer recording is not completed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. the next day. However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.
- Either the Position number or the Station name is displayed here.

Pos/Name	Date	Start	Stop	SP	Min
ZDF	27.10	20.45	21.30	LP	45
ARD	30.10	19.00	19.30	SP	30
NDR3	Sa	17.00	18.00	LP	30
ZDF	1.11	18.00	19.45	SP	45
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...
...	...	...	...	...	...
21.25.38	16.10.99	Raman (SP)			130

11 select  
CHECK: leave menu  
CANCEL delete

- For daily and weekly timer recording, the recording time for only one recording session is displayed.

## Checking the remaining tape time

This displays the remaining time for the inserted tape.

Pos	Date	Start	Stop	SP LP
2	27/10	20.00	21.30	130

20:58:20      16:10:99      Remain (SP)      130

11: to adjust SP/LP  
 ~: to select  
 STORE: to store programming  
 MENU: return without change

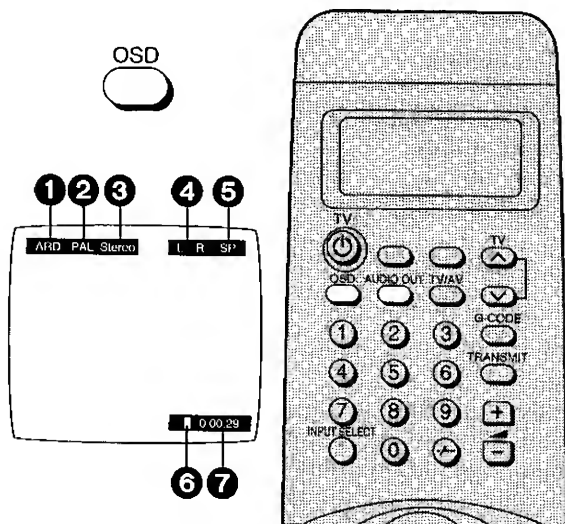
Remain time indicator

- This indicator is not displayed unless the remaining tape time has already been indicated on the VCR display. Refer to page 30.

# Other Functions

## On Screen Display

Press **OSD** to make the On Screen Display appear on the TV screen.



### 1 TV station

### 2 TV system

### 3 Stereo or Bilingual Indicator

When receiving a TV programme, the type of sound system in which it is broadcast is automatically indicated.

#### Stereo, M1 and M2 Indicator

When receiving a TV programme with the Stereo, Bilingual or NICAM sound system, the type of sound system in which it is broadcast is automatically indicated.

**Stereo:** When receiving a Stereo/NICAM stereo broadcast.

**M1 M2:** When receiving a Bilingual/NICAM dual-sound broadcast.

**M1:** When receiving a NICAM monaural broadcast.

### 4 Audio Output Mode Indicators

The Left (L) and Right (R) Indicators show which sound mode is selected with **AUDIO OUT**.

**Stereo:** Both the L and R Indicators appear.

**Left:** The L Indicator appears.

**Right:** The R Indicator appears.

**Normal:** Both the L and R Indicators don't appear.

### 5 Tape speed indicator

### 6 Tape running display

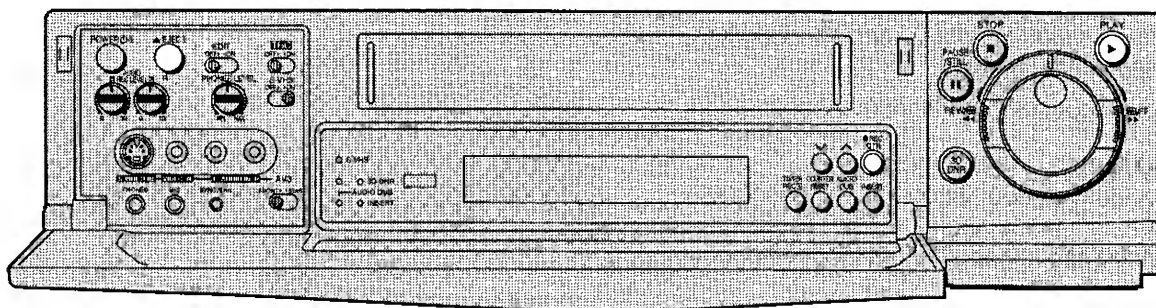
Stop, Eject	I
Rewind	◀◀
Fast Forward	▶▶
Playback	▶
Recording	●
Repeat Playback	R

### 7 Present time/Tape counter/Remaining tap time/Index Search/One-Touch Recording (OTR)

Information	Display
Present time	17:24:31
Tape counter	-2:35.47
Remaining tape time	REMAIN 2:34
Index Search	▶▶ 02
One-Touch Recording (OTR)	OTR 60

#### Notes:

- When the item "On screen display" is set to OFF (See page 22.), the On Screen Display will not appear.
- When the programme position AV is selected or during playback, the On Screen Display (1, 2, 3) will not appear.
- The On Screen Display does not appear during special playback.



## VHS Index Search System

It is very easy to find the beginning of each recording, because a special index signal is recorded at the start of each recorded segment on the tape.


### For example:

Searching for the 2nd recorded segment in the forward direction.

Press **INDEX**  twice.

(This operation is performed while the VCR is in the stop mode or normal playback mode.)



- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX** .
- Up to 20 index signals can be searched for in both directions.
- When the opposite **INDEX** button is pressed, the number shall be decreased till 1.
- The figure on the display is decremented by 1 each time an index signal is located.
- The **INDEX** search function can only work correctly, if the index signals are spaced at least 3 minutes apart in the SP mode and 5 minutes apart in the LP mode.

### Recording Index Signals

Index signals are recorded in following cases.

- When a recording is started by pressing **REC/OTR**.
- When timer recording is activated.

## NTSC Playback

Tapes recorded in the NTSC system can be played back with this VCR via a PAL system TV set.


- The playback picture may roll up or down. If the TV set is equipped with a V-HOLD control, it may be possible to stop the picture movement by adjusting this control.
- Depending on the TV set used, the picture may be in black and white. However, this is not an indication of a malfunction.
- The TBC function will not work.

## Other Automatic Functions

### Automatic Playback

When a cassette without an erasure prevention tab is inserted, the VCR starts playback automatically.

### VCR-off Playback

When the VCR is off, an inserted cassette can be played back by pressing  (**PLAY**).

### Automatic Rewinding

When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

- During OTR, this function will not work.

### Automatic Switching Off and Ejection

When the VCR is switched off, and inserted cassette can be ejected simply by pressing **EJECT**. The VCR will eject the cassette and automatically turn itself off again.

# Editing

## Assembly Editing

This function can be used to make up an edited tape from other recordings or video sources.

A new scene can be added to the end of a previous one.

### Preparations

- Connect a Movie Camera or another VCR to this VCR as shown.

- Insert a recorded cassette tape with an intact erasure prevention tab.

- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.

A1: Through the AV1 (TV) socket.

A2: Through the AV2 (DECODER/EXT) socket.

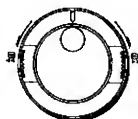
A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets.

### Operations

- 1 Press **II (PAUSE/STILL)** on the recording VCR.



- 2 Search for the end of the previous recording.



- 3 Press **REC/OTR** to switch the VCR from the pause mode to the recording standby mode.



- 4 Start the new recording by pressing **II (PAUSE/STILL)** again.



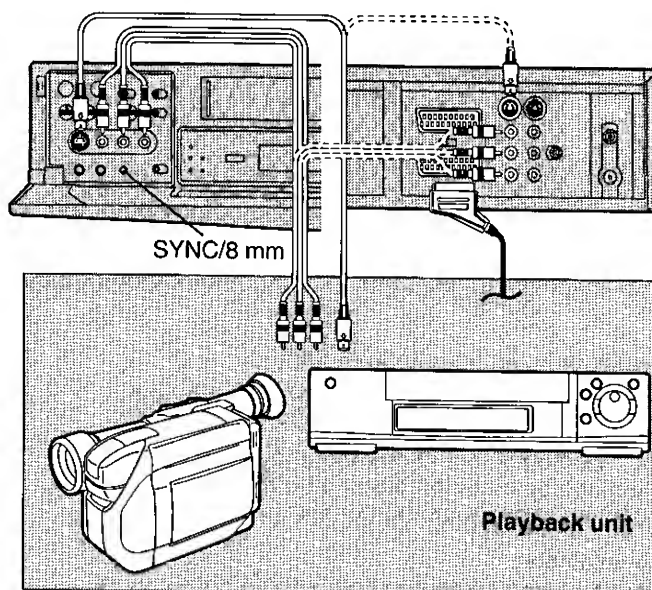
- 5 Press **■ (STOP)** to stop recording.



#### Note:

The new sound will be recorded on both the normal and Hi-Fi sound tracks, only monaural sound recording is possible on the normal sound tracks.

### Recording VCR



## Synchronized Editing

It is possible to synchronize the playback start and stop of the Movie Camera with the recording start and stop of this VCR.

### Preparations

- Connect a Movie Camera to this VCR with Synchro Connection Cord (VW-K1E).
- Turn **One-Touch-Edit** to **OFF** before connecting the Synchro Connection Cord. (See page 24.)

- 1 Put the VCR in the recording pause mode by pressing **REC/OTR** and **II (PAUSE/STILL)**.
- 2 Put the Movie Camera in the still playback mode at the point where you want to start editing.
- 3 Press **II (PAUSE/STILL)** on the VCR.
  - The Movie Camera changes over to the playback mode and the dubbing will start automatically.

### Synchronized Editing between the VCRs

When editing from another VCR equipped with the synchronized editing function, synchronized start and stop of both VCRs can be activated from this VCR.

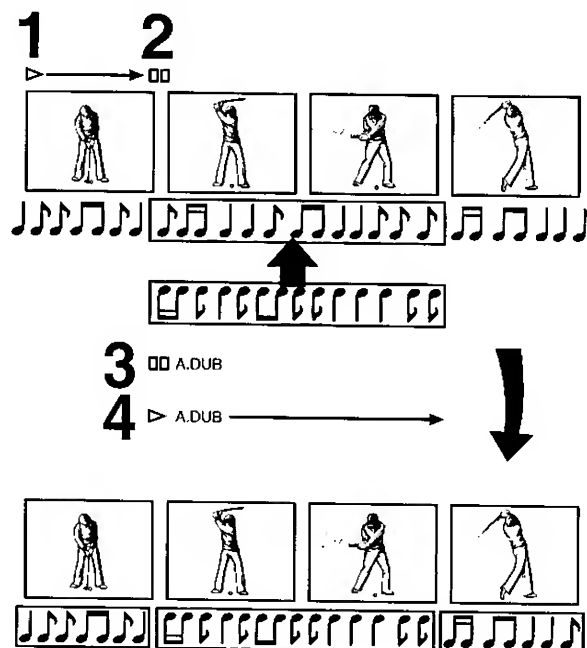
The operation is the same as described for synchronized editing from a Movie Camera.

# Audio Dubbing

The audio dubbing is made on the normal audio track and erases the original sound on this track. On Hi-Fi audio tracks, however, the original sound is maintained.

## Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN) sockets.



## Operations

## Display Symbols

1			Search for the starting point for audio dubbing.
2			Press <b>II (PAUSE/STILL)</b> at the starting point.
3			Set for audio dubbing by pressing <b>AUDIO DUB</b> . <ul style="list-style-type: none"> <li>• On some televisions, the screen image may become unstable or begin to scroll at this point. However, this is not an indication of a malfunction.</li> <li>• The <b>AUDIO DUB</b> indicator will light.</li> </ul>
4			Start recording the new sound by pressing <b>II (PAUSE/STILL)</b> . <ul style="list-style-type: none"> <li>• Stop recording by pressing <b>STOP</b>.</li> </ul>

### Note:

The new sound will be recorded on the normal sound track of the tape, and the original sound will remain on the Hi-Fi sound track. Only monaural sound recording is possible on the normal sound track.

To hear the new sound, select the normal sound track by pressing **AUDIO OUT**.  
To hear the new sound and original sound mixed together, set **Audio System** to **HIFI-MIX**. (See page 23.)

## Audio dubbing with Panasonic Hi-Fi VCR

### General

- a) Due to VHS format reasons, audio dubbing can be performed only on the normal audio track.
- b) The Hi-Fi audio tracks cannot be influenced without erasing the video signal.
- c) The audio dubbing function is provided with an automatic recording function. The volume level cannot be adjusted. When dubbing to the Hi-Fi VCR, the volume level must be considered in advance.
- d) There are three types of audio dubbing (A–C):

### A. Audio dubbing on the normal audio track

1. Select the desired AV input.
- 1.2. The microphone input may also be selected. In this case, the microphone signal has priority.  
Disconnect the microphone when other audio signals are to be used.
2. Locate the recording starting point and press **PLAY-PAUSE**.
3. Press **AUDIO OUT** three times to select the normal audio track.
4. Press **AUDIO DUB**.
5. Start audio dubbing by releasing the pause function.
6. After audio dubbing has been completed, rewind the tape and make sure that the normal audio track is selected. (Step 3)
7. Check the audio dubbing.

### B. Audio dubbing on the normal audio track with Hi-Fi Mix function

1. Select the desired AV input.
2. Locate the recording starting point and press **PLAY-PAUSE**.
3. The Hi-Fi tracks should be set to playback.
  - When a videocassette is inserted, the Hi-Fi tracks are automatically set to playback.
  - Hi-Fi tracks must be recorded. Copy the audio signal, if necessary.
4. Press **AUDIO DUB**.
5. Start audio dubbing by releasing the pause function.
6. After audio dubbing has been completed, rewind the tape and set **Audio System** to **HIFI-MIX**. (See page 23.)
7. Check the audio dubbing.  
The original sound and the new sound are heard simultaneously.

### C. Audio dubbing on the normal audio track with original sound and new sound

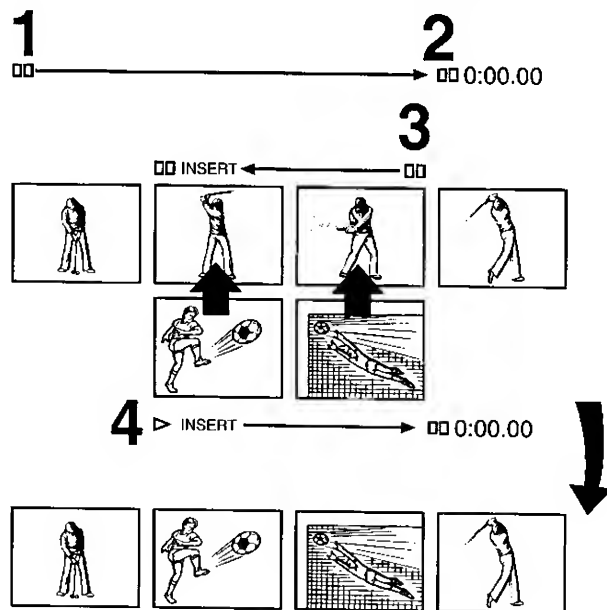
1. Select the desired AV input.
2. Locate the recording starting point and press **PLAY-PAUSE**.
3. The Hi-Fi tracks should be set to playback.
  - When a videocassette is inserted, the Hi-Fi tracks are automatically set to playback.
  - Hi-Fi tracks must be recorded. Copy the audio signal, if necessary.
4. Press **AUDIO DUB**.
  - Input the original signals of the Hi-Fi tracks (Audio-Out) to a mixing console (optional) and mix with the new sound as required.
5. Start audio dubbing by releasing the pause function.
6. After audio dubbing has been completed, rewind the tape and make sure that the normal audio track is selected. (Step 3)
7. Check the audio dubbing.

# Insert Editing

This is used to substitute one scene for another providing.

## Preparations

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets.



## Operations

## Display Symbols

1			Press <b>II (PAUSE/STILL)</b> on the recording VCR.
2			Search for the Edit out (ending) point, and set the counter to 0:00.00 by pressing <b>COUNTER RESET</b> .
3			Search for the Edit in (starting) point, and press <b>INSERT</b> . <ul style="list-style-type: none"> <li>• The <b>INSERT</b> indicator will light.</li> <li>• If you want to replace the sound on the "normal" audio track, press <b>AUDIO DUB</b>, too. (AV Insert Editing) Both the <b>INSERT</b> and the <b>AUDIO DUB</b> indicators will light.</li> </ul>
4			Start insert editing by pressing <b>II (PAUSE/STILL)</b> . <ul style="list-style-type: none"> <li>• The insert editing will finish when the counter reaches 0:00.00.</li> </ul>

### Note:

Insert Editing cannot be used on blank sections of a tape. In this case use Assembly Editing first.

The new sound will be recorded on the Hi-Fi sound track. If **AUDIO DUB** selected, the new sound will also be recorded on the normal sound track.

Only monaural sound recording is possible on the normal sound tracks.

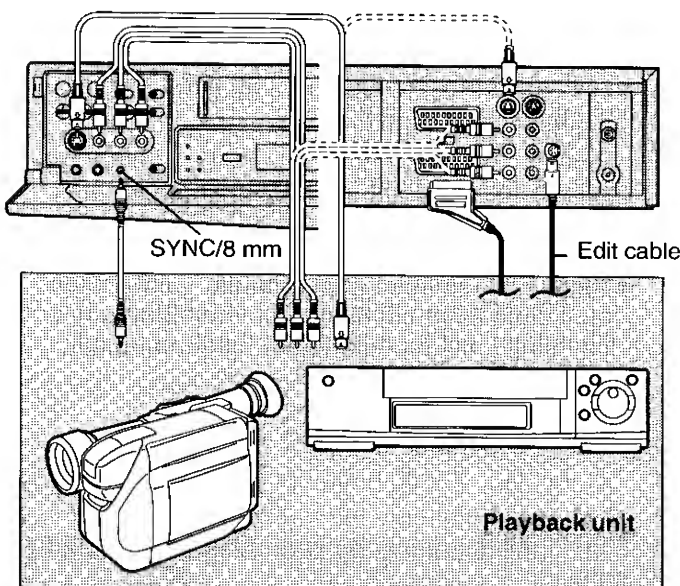
# One-Touch-Editing

With this editing, it is easy to perform repeated assemble editing, insert editing or audio dubbing operations.

## Preparations

- Before proceeding with the connections, check that the AC mains lead of both VCRs have been connected.
- Before the VCR is connected to a movie camera or another VCR, select **One-Touch-Edit** to **ON**. (See page 24.) The playback VCR display or movie camera viewfinder image may be abnormal if the edit cable is connected with **One-Touch-Edit** left **OFF**.
- Connect a movie camera or another VCR to this VCR as shown.
- Use the **SYNC/8 mm** socket when connecting this unit to a VCR or movie camera equipped with a LANC socket.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing **INPUT SELECT** to set A1, A2 or A3.
  - A1: Through the AV1 (TV) socket.
  - A2: Through the AV2 (DECODER/EXT) socket.
  - A3: Through the AV3 (AUDIO IN/VIDEO IN/S-VIDEO IN) sockets.
- Upon completion of the One-Touch-Editing, disconnect the edit cable.

## Recording VCR

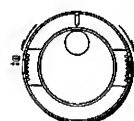


## Operations

- 1 Press **II** (**PAUSE/STILL**) on the recording VCR.



- 2 Search for the end of the previous recording.

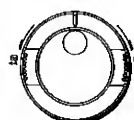


- 3 Press **REC/OTR** to switch the VCR from the pause mode to the recording standby mode.



- The playback VCR will be in still mode.
- If **INSERT** or **AUDIO DUB** is pressed instead of **REC/OTR**, Insert Editing or Audio Dubbing can be performed.

- 4 Search for the Edit in (starting) point on the playback VCR.



- 5 Start One-Touch-Editing by pressing **II** (**PAUSE/STILL**) again.



- 6 Press **II** (**PAUSE/STILL**) at the Edit out (ending) point on the playback VCR.



- For Editing in succession, repeat 4 to 6.

- 7 Press **■** (**STOP**) to stop editing.



# Before Requesting Service

Before requesting service, check the following points once again.


Message of On Screen Display		
MESSAGE	CAUSE	REMEDY
This action is not possible before time and date are set	<b>G-CODE</b> , number button and then <b>TRANSMIT</b> are pressed when date and time are not set.	Set date and time.
Please insert video tape!	<b>REC/OTR</b> , <b>▷ (PLAY)</b> , <b>▶▶ (FAST FORWARD)</b> , <b>◀◀ (REWIND)</b> , <b>INSERT</b> or <b>AUDIO DUB</b> is pressed when no cassette in the VCR.	Insert a video cassette.
Please use tape with recording tab intact!	<b>REC/OTR</b> , <b>TIMER REC</b> , <b>INSERT</b> or <b>AUDIO DUB</b> is pressed without tab of Cassette.	Use a cassette with tab.
No timer recording programmes to be done!	<b>TIMER REC</b> was pressed even though nothing has been programmed.	Programme the timer recording.
Please put VCR into stop mode first!	<b>G-CODE</b> was pressed during a tape operation.	Set the VCR to the stop mode.
DEW FORMED IN THE VCR.	Dew has formed.	Wait until the message disappears.

•Other messages besides these may appear. Follow the instructions in the message.

Self Test Indication		
This VCR has a self-diagnosis and display function. If the VCR detects trouble during installation or during use, the following indications automatically appear in the VCR display. Indications are displayed in the form of a single English letter plus two numbers such as [H01].		
INDICATION	CAUSE	REMEDY
U 1 0	Dew has formed.	Wait until the indication disappears.
H □ □	Some trouble has occurred. (Numbers following H and F differ according to the status of the VCR.)	Consult your dealer for further advice.
F □ □		

VCR will not operate correctly			
SYMPTOM	CAUSE	REMEDY	CHECKED
VCR display is not illuminated.	Mains lead is not connected.	Reconnect mains lead to VCR.	
	VCR Display setting is OFF.	Set <b>VCR Display</b> to ON or DIMMED. See page 23.	
VCR display is illuminated but VCR will not operate.	VCR is in timer mode.	Press <b>TIMER REC</b> to operate VCR manually.	
	Safety devices are operating.	Disconnect mains lead and wait for 1 minute. Reconnect mains supply and check functions.	
	Dew may have formed.	When the dew indicator flashes, wait until this indicator disappears.	
VCR picture does not appear on TV screen.	The RF output channel is set to "--" (RF OFF).	Set the RF channel to a setting other than "--" (RF OFF). See page 16.	

Playback will not operate correctly			
SYMPTOM	CAUSE	REMEDY	CHECKED
Picture noisy or not in colour. Horizontal bars or lines run down the screen.	Tracking is not correct.	Adjust the tracking. See page 9.	
	TV set is not tuned to VCR.	Tune the TV to your VCR. See page 16.	
	Video heads are clogged or worn.	Consult your dealer for further advice. See page 46.	

Recording will not operate correctly			
SYMPTOM	CAUSE	REMEDY	CHECKED
"  " indication flashes whenever recording is attempted.	Erasure prevention tab on cassette is broken off.	Use the video cassette with intact erasure prevention tab, or cover tab hole with adhesive tape, if original recording is no longer required.	
Picture is recorded with noise or blank screen.	Aerial or aerial lead is defective.	Check aerial connection to VCR. See page 12. Check your normal TV picture. If there is no picture, check your aerial.	
	VCR is not correctly tuned.	Re-tune VCR. See page 18–20.	
	A1, A2 or A3 is selected.	Select the required TV programme.	
Timer recording cannot be performed.	Clock or calendar is incorrectly set.	Check clock and calendar. Set to present time. (Note this is a 24 hour clock.) See page 21.	
	Recording start or end time setting is incorrect.	Set recording start and end time correctly.	
	VCR is not set for timer recording.	Press <b>TIMER REC</b> after programming for timer recording.	
AV external recordings cannot be made.	A1, A2 or A3 is not selected.	Select A1, A2 or A3 by pressing <b>INPUT SELECT</b> .	
	External AV connections are incorrect.	Check that connections for external video and audio source are correct. See page 38.	

Remote controller will not work correctly			
SYMPTOM	CAUSE	REMEDY	CHECKED
Remote controller does not operate correctly.	Remote controller transmitter beam is not reaching VCR.	Ensure that remote controller is being pointed at VCR and that transmitter beam is not obstructed.	
	Distance is too far.	Use remote controller within 7 m of VCR. If this range is not possible, replace batteries.	
	Batteries are exhausted.	Replace batteries. Note precaution for replacement on page 11.	
	Batteries are incorrectly fitted with (+/–) reversed.	Fit batteries correctly as shown on page 11.	
	Wrong remote control mode has been selected.	Set to the correct remote control mode. (See page 24.)	

# Precautions

Please read these cautions before you operate this VCR.

## Avoid Sudden Changes in Temperature

If the VCR is suddenly moved from a cold place to a warm place, condensation may form on the tape and inside the VCR. In this case, the Dew Indicator "d" will flash on and off and the VTR will not operate.

## Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

## Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

## Keep away from High Temperature

Keep the VCR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

## Keep Magnets away

Never bring a magnet or magnetized object near the VCR because it will adversely affect the performance of the VCR.

## No Fingers or Other Objects Inside

Touching internal parts of this VCR is dangerous, and may cause serious damage to the VCR. Do not attempt to disassemble the VCR. There are no user serviceable parts inside.

## Keep Water away

Keep the VCR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VCR, serious damage could occur. If you spill any liquid into the VCR, consult qualified service personnel.

## Lightning

To avoid damage by lightning, disconnect the aerial plug from the VCR.

## Cleaning the VCR

Wipe the VCR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

## Stacking

Place the VCR in a horizontal position, and do not place anything heavy on it.

## Video Head Clogging

The video heads place picture signals on the tape during recording and read picture signals from the tape during playback and they are, therefore, of critical importance for the picture quality. If the VCR is used over extremely long periods of time, these heads may become dirty and clogged. In such a case, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

## If Dew Condensation Forms in the VCR

Condensation may form in the VCR if:

- The VCR is in a room where the heater has just been turned on.
- The VCR is in a room with steam or high humidity.
- The VCR is brought from cold surroundings into a well-heated room.
- The VCR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

When dew forms in the VCR, the Dew Indicator "d" on the display will flash on and off (The self test indicator "U10" will also appear in the VCR display.) and all the function buttons are made non-operational to protect the tape and the video heads. When the Dew Indicator flashes, wait until this indicator disappears.

- If dew condensation forms inside the VCR while the VCR is off, it will turn on automatically and the Dew Indicator will flash on and off. As soon as the dew condensation has been dissolved, the VCR will turn itself off again.

## Dirt on the video heads

If the video heads get dirty, pictures will not be recorded or played back clearly.

(See the following conditions.)



If this happens, clean the video heads with a commercially available cleaning cassette.

If the problem still persists after performing above, contact a service personnel to request assistance.

# Specifications

## NV-HS950AM

<b>Power Source:</b>	220–240 V AC 50/60 Hz
<b>Power Consumption:</b>	30 watts

<b>Video Recording System:</b>	2 rotary heads, helical scanning system
<b>Video Heads:</b>	4 heads
<b>Audio Heads:</b>	2 heads (Hi-Fi)
<b>Tape Speed:</b>	SP; 23.39 mm/sec. LP; 11.7 mm/sec.
<b>Tape Format:</b>	VHS/S-VHS tape
<b>Record/Playback Time:</b>	SP; 240 min. with NV-E240    SP; 260 min with NV-SE260 LP; 480 min. with NV-E240    LP; 520 min. with NV-SE260

### VIDEO

<b>Television System:</b>	CCIR; 625 lines, 50 fields, PAL colour signal	
<b>Modulation System:</b>	Luminance; FM azimuth recording Colour signal; converted subcarrier phase shift recording	
<b>Input Level:</b>	AV1/AV2; 1.0 Vp-p, VIDEO IN (AV3) (PHONO); 1.0 Vp-p, S-VIDEO IN (AV3); 1.0 Vp-p,	75 ohm, terminated 75 ohm, terminated 75 ohm, terminated
<b>Output Level:</b>	AV1/AV2; 1.0 Vp-p, VIDEO OUT (PHONO); 1.0 Vp-p, S-VIDEO OUT; 1.0 Vp-p, RF Modulated; UHF channel 21–69,	75 ohm, terminated 75 ohm, terminated 75 ohm, terminated 75 ohm

### AUDIO

<b>Input Level:</b>	AV1/AV2; –6 dBV, AUDIO IN (AV3) (PHONO); –6 dBV, MIC (M3); –70 dBV,	more than 10 kohm more than 47 kohm
<b>Output Level:</b>	AV1/AV2; –6 dBV, AUDIO OUT (PHONO); –6 dBV, HEADPHONES; –30 dBV,	less than 1 kohm less than 1 kohm 8 ohm
<b>Audio Track:</b>	1 track (Normal-mono only), 2 channels (Hi-Fi sound-stereo)	

<b>Video Horizontal Resolution:</b>	Colour; more than 240 lines (VHS/SP) more than 400 lines (S-VHS/S-Video Socket)
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<b>Dynamic Range:</b>	Audio; more than 90 dB (Hi-Fi audio track)
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<b>Audio Frequency Response:</b>	20 Hz–20 kHz
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<b>Wow and Flutter:</b>	0.005% Wrms/Hi-Fi
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<b>Operating Temperature:</b>	5°C–40°C
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<b>Operating Humidity:</b>	35%–80%
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<b>Weight:</b>	5.5 kg
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<b>Dimensions:</b>	430 (W)×107 (H)×356 (D) mm
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<b>Standard Accessories:</b>	1 pc. RF Coaxial Cable 1 pc. Remote Controller 2 pcs. "R6" size batteries 2 pcs. AC Mains Lead 1 pc. Audio/Video Cable 1 pc. Edit Cable 1 pc. S-Video Cable
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Weight and dimensions shown are approximate.  
Specifications are subject to change without notice.

**Matsushita Electric Industrial Co., Ltd.**  
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